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## INDEX

An index to the eighty-sixth volume of THE RAILWAY GAZETTE covering the issues from January 3 to June 27, 1947, has been prepared and is now available free of charge on application to the publisher

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## Railway and L.P.T.B. Executives

IN our August 29 issue we recorded the appointment of Sir Eustace Missenden as Chairman of the Railway Executive under the British Transport Commission, and of Lord Latham as Chairman of the London Transport Executive. The Minister now has announced the names of the remainder of the members, which are given on page 329. The railway officers who have accepted invitations to become members of the Railway Executive are Mr. V. M. Barrington-Ward, Mr. David Blee, Mr. R. A. Riddles, and Mr. J. C. L. Train. The trade union representative is Mr. W. P. Allen, General Secretary of the Associated Society of Locomotive Engineers & Firemen, and the remaining full-time member is General Sir William Slim. Mr. C. Nevile, who has been associated with agriculture, is a part-time member. On the London Transport Executive, Mr. John Cliff, Mr. A. H. Grainger, Mr. L. C. Hawkins, and Mr. A. B. B. Valentine, the four full-time members, all have been with the L.P.T.B. since its formation. The part-time members are Sir Richard Burbidge, who has large stores interests, Sir Edward Hardy, who has been a member of the L.P.T.B. since August last year, and Mr. T. E. Williams, of the Co-operative Wholesale Society. So far, no precise indication has been given as to the functions of these Executives. The Act merely provides that "Each Executive shall, as agents for the Commission, exercise such functions of the Commission as are for the time being delegated to them by or under a scheme made by the Commission and approved by the Minister."

## New Export Targets

Sir Stafford Cripps's statement to the representatives of employers' organisations and trade unions on September 12, when he announced the Government's revised export programme, had the merit of facing the gravity of the nation's plight. In the plainest terms he told his hearers that our national survival at present, and our hope for the future, would depend on the job that British private enterprise could do in export markets. The new overall export targets, fixed at 143 per cent. of the 1938 volume by the middle of next year, and 164 per cent. by the end of 1948, will entail an increase of £31 million of exports a month at current price levels, which is £372 million over 12 months. The principle is to be adopted of giving the greatest stimulus to the export of those manufactured articles which show the highest conversion value, so as to economise in the use of the two most vital factors in our production, coal and steel. The large group of railway engineering supply industries comes within this definition, and it may be expected, therefore, that they will receive the necessary priorities.

## Problems Facing Industry

Among the immediate problems which face industry in complying with the Government's decision are the securing of the coal and power, the materials, and the labour to ensure the efficient running of factories. On the first of these, Sir Stafford Cripps said that industry would require 24½ million tons for the winter six months, "and this we must arrange to get." Presumably, therefore, industry in future is to be the first claimant on coal output for this amount. Similar steps will have to be taken for coke, diesel oil, and fuel oil. Whether the Government's plans will prove to have ensured the availability of materials and manpower remains somewhat vague. The most important sources from which materials and manpower can be made available must be cuts in current Government capital expenditure, and the President of the Board of Trade was unable to give any specific re-assurance on this point.

## Increased Output of Steel

The August statistics of steel production showed a substantial increase over those of July, and were greater also than in August last year. Output in the early part of the month was affected by holidays, but rose during each week of the month, and in the last week exceeded the rate of 13½ million tons a year. For the whole month it was at the annual rate of 12,178,000 tons, which compares with 11,007,000 tons a

year in July and 11,747,000 tons in August a year ago. These encouraging figures are 'subject to a warning issued by the British Iron & Steel Federation that this rate of production can be maintained only if coke supplies are adequate for pig-iron production to be expanded to the level needed. Pig-iron production in August was at the rate of 7,660,000 tons a year, compared with 7,460,000 tons in July and 7,558,000 tons a year ago. The coal position at the end of August was not hopeful, as Ministry of Fuel & Power figures showed that iron and steel works had in hand only 2-3 winter weeks' supply.

### Overseas Railway Traffics

The high rate of increase over the preceding year shown in Argentine railway results for the week ended August 30 was not maintained in the next seven days, when the B.A.G.S. gain was ps. 16,000 as compared with ps. 655,000 in the preceding week, and the B.A. Western improvement declined from ps. 360,000 to ps. 138,000. Central Argentine traffics showed less variation, and presented a more favourable comparison in the second week of the fortnight under review than in the first, the increases in the two weeks being ps. 124,025 and ps. 144,124. A better trend recently in Entre Rios results has brought that company's aggregate to ps. 96,600 above its position at this time last year. Increases aggregating ps. 184,700 in the four weeks ended September 6 gave the Argentine North-Eastern a gain of ps. 49,100 over its results for the first ten weeks of 1946-47. Some results are tabulated below:—

	No. of weeks	Weekly traffic	Inc. or dec.	Aggregate traffic	Inc. or dec.
Buenos Ayres & Pacific* ...	10	2,600	+575	24,400	+ 3,362
Buenos Ayres Great Southern*	10	3,347	+ 16	33,197	+ 949
Buenos Ayres Western*	10	1,402	+138	13,411	+ 1,479
Central Argentine*	10	3,304	+144	32,059	+ 960
Canadian Pacific	36	1,471,250	+95,250	52,760,000	+4,202,000

\* Traffic returns in thousands of pesos

The month of August brought an aggregate increase of £713,900 in receipts of the Canadian Pacific Railway, which for the eight months to August 31 were £4,106,750 ahead of last year.

### C.P.R. Interim Dividend Again 2 Per Cent.

The directors of the Canadian Pacific Railway Company have declared a dividend of 50 cents a share, equal to 2 per cent., on the ordinary stock in respect of 1947. This is at the same rate as for each of the three preceding years, when it was followed by a final of 75 cents a share, or 3 per cent. After the board meeting, Mr. W. M. Neal, Chairman & President of the company, explained that the declaration of the dividend had been made possible solely because of income derived from sources other than railway operation, although gross earnings from freight and passenger traffic had increased over the previous year, higher wages and advances in the cost of material and supplies had resulted in a lower net railway income. In August it was stated that net earnings showed a reduction of over \$1,500,000 in the first half of this year, compared with the corresponding period in 1946, in spite of an increase of \$11,373,000 in gross earnings from railway operations.

### Caledonian Railway History

Although the assembly at lunch on Wednesday of last week at the Central Hotel, Glasgow, foregathered to mark the centenary of the opening for public traffic of the first section of the Caledonian Railway, history was far from providing the keynote to the speeches. As recorded elsewhere, both the Minister of Transport and the Chairman of the L.M.S.R. dealt with urgent current topics. Nevertheless, the background was there that Scotland had in the Caledonian Railway, and in its successor, the L.M.S.R., a wealth of tradition and solid development in public service. For 75 years the "Caley" fostered Anglo-Scottish trade and travel, aided the development of Scottish industry, and opened up great tracts of very wonderful country. At the time of the formation of the L.M.S.R. which was exactly a quarter of a century ago, it was the largest Scottish constituent of that organisation, owning or sharing in the ownership of more than 1,100 miles of railway, operating some 1,070 locomotives, and having a

combined stock of passenger and freight vehicles exceeding 55,000. An admirable illustrated booklet of 32 pages and eight plates was presented to every guest at the lunch, setting out in brief the history and development of the Caledonian Railway, and the L.M.S.R. is deserving of congratulation for the production of so noteworthy a memento. Unfortunately, limitations on paper supply have prevented this brochure being placed on public sale.

### Minister's Tribute to L.M.S.R.

The Minister of Transport paid a warm tribute to the L.M.S.R. when he spoke at the luncheon in Glasgow, held to celebrate the centenary of the Caledonian Railway. Mr. Alfred Barnes said that he did not know of any other railway in the world that had as high a standard of efficiency and a greater concentration over its mileage than the L.M.S.R. Every person who had been associated with that magnificent enterprise in British engineering could claim legitimate pride in the centenary ceremonies. In a more general passage of his speech, the Minister said that there had been no time when the railway industry was faced with greater difficulties. As a result of the war, it had great arrears in maintenance and replacement, which had to be overtaken at a time when the railways were sharing in a general shortage of supplies. Their effective wagon strength was 200,000 less than in 1938, and of the million wagons available today to handle the whole trade of the country, 450,000 of them had to be earmarked for coal. He pleaded for a quicker turn-round of wagons, and said that a saving of one day automatically would add 100,000 to the present total of effective wagons.

### Further New Southern Railway Coaches

In October, 1945, members of the public were invited to complete a questionnaire on accommodation provided in the prototype post-war passenger coach then being exhibited at Waterloo Station, and the company was guided by the preferences expressed then, when the new 3-coach sets which appeared at the end of 1946 were being designed. These 3-coach sets, which have been running on the West of England trains and to a certain extent on the Bournemouth line, now have been followed by the first of eleven new 6-coach sets, and many of the features of the prototype coach again have been incorporated. The new sets are intended primarily for the Bournemouth services, and include kitchen and restaurant cars. The bodies of the coaches are radial-sided with curved windows, in accordance with recent Southern Railway practice, and doors of light pressed-steel with frameless drop-windows, are fitted. Sliding ventilators are provided in corridors as well as in compartments. Corridors and lavatories are steam heated, and electric heating-mats are fitted under the floor covering adjacent to each seat. The restaurant cars and kitchen have been designed to give passengers maximum comfort, and to ensure that meals are prepared in the most hygienic and modern conditions possible on a train. The dining saloons have loose chairs designed for comfort and easy cleaning, and which give free access to the plate-glass top tables. An illustrated article giving details of these new 6-coach sets appears elsewhere in this issue.

### A Head-On Collision

Head-on collisions on single lines have occurred very rarely in Great Britain. The worst was that between two passenger trains near Norwich on September 10, 1874, when 25 lives were lost. In January, 1917, two goods trains met near Ellesmere, on the Cambrian Railway, each carrying a train tablet, a mystery that was never satisfactorily cleared up, and on the same railway on January 26, 1921, an express and a local train met near Abermule and 17 persons were killed. The local train had entered the section carrying the tablet for the section in rear. In the accident near Hallen Marsh Junction, G.W.R., on February 18 last, a train was travelling wrongly on a single-line branch, the enginemen believing they were still on the main double-line which they should have followed. As will be seen from our summary elsewhere of Brigadier C. A. Langley's report, the signalman could not pull off a starting signal, as he had not set the junction correctly. He failed to notice his error, imagined a track circuit lock

to be defective, and gave authority to pass the signal. The driver, in turn, omitted to verify the position of the points and also overran two signals at danger.

### Jumping to Conclusions

Jumping to the conclusion that something has failed when the locking is really functioning correctly has been the cause of several accidents as well as many narrow escapes. A particularly disastrous instance was the Hall Road accident on the L. & Y.R. on July 27, 1905. Facing points leading to a middle siding had electric detection, and the signalman, after throwing them to and fro to close them tightly, left them standing for the siding without noticing it. He thereupon concluded that the detection had failed, and showed a green flag to an approaching electric train, contrary to rule. The motorman, who could see that the advanced starting signal ahead was off, accepted this, accelerated, and found his train turned suddenly into the siding, where it collided violently with an empty one. There were 21 fatalities. This accident, as does the one at Hallen Marsh, recalled the argument advanced by some that the mechanical locking should act on the catch handle and any electric locking directly on the lever, so that correct action of the former cannot be mistaken for the action or failure of the latter. It is easy to imagine that a failure obtains if one has taken place recently.

### Taking the Wrong Line

Numerous instances are known of trains being driven along a wrong line, often for some distance, but they have seldom resulted in accidents calling for formal inquiry. A very curious case occurred in the early hours of March 19, 1887, on the Tottenham & Hampstead line, when a G.E.R. engine and brake started down the up line from Junction Road, passed four stations and eleven bridges—one practically a tunnel—and collided with a Midland passenger train near Harringay Park. None of the three signalmen concerned noticed that the engine passed them on the wrong line, but a porter at Hornsey Road did so. The next year, on August 6, a similar case occurred on the L.S.W.R. A light engine left Kingston Junction box on the wrong line, passed over six bridges, including the 162-yd. Thames bridge, and, running through Hampton Wick at, as the signalman thought, 50 m.p.h., dashed into a down train. Two passengers and the train enginemmen were killed. In both these cases the drivers, standing on the right, failed to see that they passed close to the platforms, bridges, etc., and that there was no line of rails next to them. At Hallen Marsh, too, the driver did not observe that he was not on a double line, which he might have been expected to do, even though it was dark.

### Steam, Electric, or Diesel-Electric Power?

Decisions of considerable moment are having to be taken at the present time by the managements of United States railways as to their future motive power. For shunting work the diesel-electric locomotive is carrying all before it, and many of the major lines are introducing similar power on an extensive scale for high-speed passenger and long-distance freight service. There are exceptions, such as the Chesapeake & Ohio and the Norfolk & Western, whose profits depend mainly on the carriage of coal; on these lines greater efficiency in the use of steam is a matter of constant research. Another large railway which as yet has done little in the direction of diesel propulsion is the Southern Pacific. This company, however, uses fuel oil in another way, for, with the indigenous oil supplies of California ready to hand, most of its steam locomotives are oil fired. The question now to be decided by the Southern Pacific and other lines, as influencing their future motive-power policy, is how the price of oil is likely to be affected by supply and demand. Moreover, there may be far-reaching results from a joint study by the Southern Pacific and the Bonneville Power Authority—a great hydro-electric scheme based on the Grand Coulee and Bonneville Dams on the Columbia River in Oregon—of the possibility of large-scale electrification of the Southern Pacific. In long-term expenditure, complete dieselisation and complete electrification would be roughly equal in cost, but the need to protect oil reserves might encourage the Southern Pacific to electrify.

### Yellow Light for Transport Commission

WITH the awful example of the Coal Board before us, it is to be hoped that the Transport Commission will avoid making the same mistakes as that body while there is yet time. The appointed day, January 1 next, for the passing into public ownership of the internal transport system of this country, is still three months off. We hope that the Minister of Transport and the members of the Transport Commission (whose function, according to the Transport Act, is to decide the policy to be adopted for the control and management of Great Britain's internal transport of the future) have read the leading article relating to the strike of the Grimethorpe miners which appeared in the *Daily Mail* on September 9. In case they have not, we publish below certain relevant extracts from it:—

"What is emerging from this disastrous stoppage is a thorough-going hatred of the Board. One miner said: 'We dislike being managed by a horde of bureaucrats.' In that remark lies a world of resentment against a huge, impersonal organisation, with its highly paid executives, its 'jobs for the boys,' its luxury mansions and lily ponds, and its officials who know little or nothing about mining coal. The whole set-up is far more inhuman and remote than the old-time boss or even the more modern limited company. The miner could argue with the 'boss' when he had the chance, but he cannot bawl out the Coal Board. He is bitterly disappointed with this particular fruit of nationalisation. But he should have known, because he was warned often enough what to expect.

"Nationalisation in its ultimate form is found in the Armed Forces, and every man who has served with the Colours needs no lesson in how much 'ownership' he exercised there. The miners have discovered that nationalisation does not mean 'the mines for the miners' any more than it will mean the trains for the drivers or the buses for the conductors.

"The ruling class can never be the majority. If it is not the landowners or the industrialists, orders will come from the bureaucrats, the managers, the commissars—or the stormtroop leaders. Socialists have chosen the bureaucrats and they must put up with them. If they want a change they must bring it about constitutionally and not by direct action. We agree with the miners that the Coal Board is far too centralised. The Conservatives are nearer what they want than are the Socialists. In their Industrial Charter are proposals for decentralising State-controlled industries and introducing the human touch."

It has been stated officially that the remit from the Transport Commission to the Railway Executive is "to weld the four main-line railways and all the smaller ones that are left into one complete unit." Does not this follow the line that has been adopted in the case of the Coal Board? It has been admitted that at least two of the railway groups are too big, but it appears that the remedy is to be the homeopathic doctrine of having one still bigger.

What have traders and the travelling public really gained from 25 years of grouping as an offset to increases in rates and fares? We are well aware that the P.R.Os. have fulfilled admirably their function in claiming that the public have benefited by the introduction of bigger locomotives, better carriages, electrification, traffic control, higher-speed trains, colour-light signalling, and so on and so forth. But can grouping as such really take any credit for these improvements? Would it not be true to say that they are just a continuation of the improvements which were taking place decade after decade since the days of George Stephenson?

It is an interesting reflection that 25 years of grouping have not produced one new terminus in London. The new Waterloo was built and opened by the old London & South Western Railway before grouping took place. Can it be said that the district served by the old Lancashire & Yorkshire Railway has a better service today? Other instances could be given, but we refrain.

One of the most ominous portents for the future of British railways has been the reiterated insistence of the Minister of Transport that the railways *must* be made to pay their way. If, as a result of nationalisation, the export trade could have hoped for low freight rates, and passenger facilities and new



hotels such as would encourage tourists from overseas with a resultant influx of foreign exchange, the experiment, even though costly to the taxpayer, might be in the national interest. The present indications, however, are that nationalised transport will be much more analogous to the State-owned and operated post office, which, in effect, has become a form of thinly-disguised indirect taxation.

The pity of it all is that the coming upheaval should have been brought about at the behest of ideological rather than practical considerations, when much the same ends could have been achieved if the Government had decided that the State should become a partner in the ownership of British transport. With the end of the war it had an unprecedented opportunity for obtaining a financial stake in the transport business. It could have done this by subscribing capital which would have enabled the companies to have pressed forward with repairs, renewals, and improvements, somewhat on the lines which were adopted when, during the depression, the Government assisted the railways to raise capital at a low rate of interest for the purpose of putting in hand works to assist in absorbing redundant labour.

Indeed, this could have been done at a much earlier stage, when grouping was brought into being, if the more simple and probably more effective steps had been adopted of making the statutory companies the equivalent of holding companies and the constituents the operating companies. Thus, for example, the London & North Eastern would have been the holding and finance company in partnership with the State, and the Great Northern, Great Central, Great Eastern, the North Eastern, and the North British the operating concerns all of comparable size.

Is it not significant that the railway standing highest in public esteem at the present time is the Southern—the smallest of the four main-line companies? The greatest error of those responsible for the 1923 grouping was the disappearance of the Midland Railway as a separate undertaking. No other British railway so nearly reached 100 per cent. efficiency in all departments. Instead of four groups, there should have been ten "Midlands," each competing to be best.

### The Westinghouse Empty and Load Brake

**I**N this country, papers on railway brakes are of comparatively infrequent appearance; and a really first-rate presentation of some particular aspect of this important subject is a rarity. For that reason, the Institution of Locomotive Engineers is to be congratulated on having secured so authoritative a paper as that by Mr. Brian Fawcett, M.I.Loco.E., which was read at the opening of its 1947-48 session in London on September 10.

Under the title "The Westinghouse Automatic Empty and Load Brake with Straight Air Control: Its Installation, Operation, and Maintenance," the author gave a valuable account of the use of a special form of compressed-air brake designed to meet unusually severe operating conditions. There is a certain amount of justification in his complaint that, owing to their loyalty to the vacuum brake, British engineers generally neglect to study the relatively complicated air-brake systems. Thus, although modern London Transport rolling stock can show some highly-developed examples of compressed-air brakes, these are a small fraction of the whole, and the root of the matter may lie rather in the fact that the science of continuous railway brakes has for two generations been the "Cinderella" of all the more specialised fields of railway engineering. Perhaps this neglect may be connected with the excellent signalling and permanent way, the fact that British railways are fenced-in throughout, and the absence of very long heavy gradients.

On the railway with which Mr. Fawcett has been associated, however, the line climbs to an altitude of 15,806 ft. above sea level in 110 miles, a rise of which 13,000 ft. takes place in 73 track-miles alone. The line is standard gauge, and an indication of the braking duty may be gathered from the author's figures relating to average rate of wear of brake blocks, namely,  $\frac{1}{8}$  in. per 257 km. on passenger coaches and  $\frac{1}{4}$  in. per 108 km. on freight vehicles. These figures take unbraked as well as braked mileage into account.

For such railways, the vacuum brake has inherent limitations owing to the low vacuum obtainable on the upper portions of the line; and the automatic compressed-air brake requires

extremely careful handling if the main reservoir is not to be exhausted. The Westinghouse company therefore devised a system in which the simple "straight" air brake is superimposed on the automatic air brake, which thereupon functions as an emergency brake. This arrangement has the advantage of retaining the automatic brake in fully-charged condition, ready for use if needed, so that there is no danger of a train getting out of control. Operation of the brake is simpler also for the driver, so that he is left freer to concentrate on the track ahead.

There is more than one variety of automatic brake with straight air control; the author is concerned with one in which the "6-ET" equipment is used, with "H-6" driver's valve and "6-E" distributing valve. For the straight air brake the "S-3" driver's valve is provided. Mr. Fawcett finds that "the cross-compound compression is to be recommended under any conditions" because of its economical use of steam. He gives some useful practical observations on the disposition of the main reservoir—and, indeed, on all the items of the brake equipment and on the cab layout. Methods of arranging the brake components on freight and on passenger vehicles also are given, regarding both of which Mr. Fawcett remarks how unsatisfactory it is when air brakes are fitted to wooden-framed, as compared with steel-framed, vehicles.

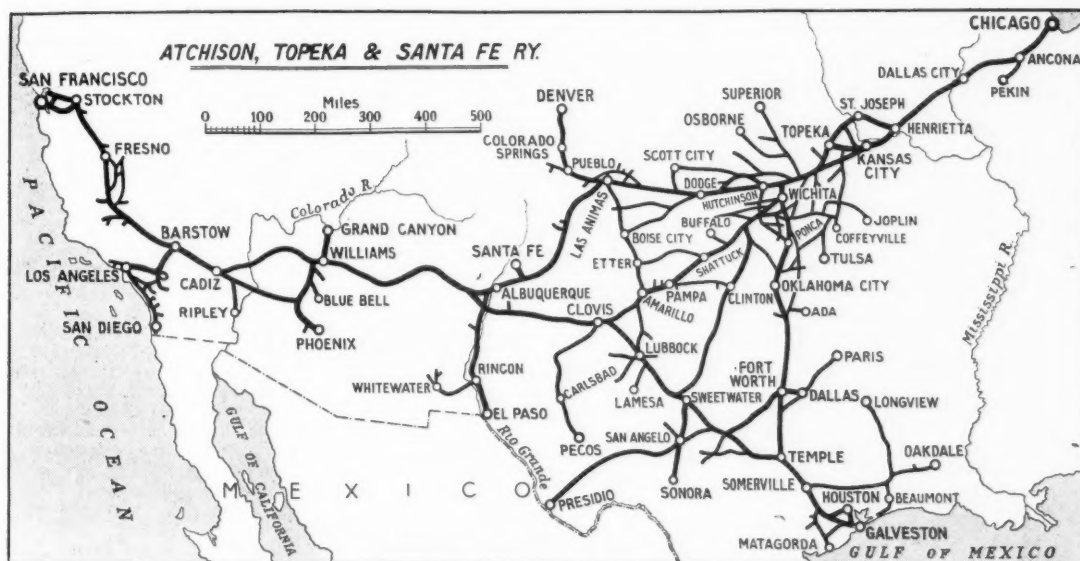
The secret of the success attending the use of this complicated and sensitive apparatus by all drivers—not merely a few specially selected and trained in its operation—forms the most interesting part of the paper. Two chief means were used to secure good results: mobile instruction cars; personal instruction of drivers on the road by specially trained air-brake inspectors. Ordinary instruction manuals issued by manufacturers are not sufficient, because they can cover only average conditions, and cannot help with the unique operating problems imposed by a particular locality. Specially written manuals, however, produced locally for dealing with particular conditions, can be most effective. Apart from being able to handle a train competently, a driver should be able also to carry out a meticulous test of the brakes before descending a long severe gradient; and this forms part of the training described.

Regarding maintenance, the opening remarks are worth quoting: "It is difficult, if not impossible, to obtain satisfactory results from the air brake if maintenance is not carried out according to the codes laid down by the Association of American Railroads and the Westinghouse Air Brake Company, and to attempt to save expense by cutting down on the shop equipment is false economy." He generously gives the results of his rich experience in the maintenance of all the items in this equipment, and describes and illustrates a portable "laundry" plant for cleaning air-pump components, using a caustic-soda solution. This is an idea worthy of study by all running-shed superintendents, as it would appear to have possibilities in other directions.

### The Longest Railway in the U.S.A.

**T**HE longest railway in the United States stretches across the central western region from Chicago to San Francisco and San Diego on the Pacific coast, and to Galveston on the Gulf of Mexico, but takes its name from three towns in the middle of the system—Atchison, Topeka and Santa Fe. The first town stands on the Missouri, surrounded by rich agricultural and fruit-growing land. Topeka, where the building of the line started in October, 1868, is an important centre 70 miles west of Kansas City. The curious name of the place is an Indian word for potato patch. It now denotes the capital of Kansas and a railway headquarters employing thousands of people in offices and workshops. Santa Fe was once a Spanish outpost, as the meaning of the words, "Holy Faith," shows. Though the settlement was high up among the mountain ranges of New Mexico, trade developed there from the 16th century onwards. A stone in the plaza marks the end of the trail traversed by the prairie wagons carrying goods from the eastern states. In 1880 the railway reached Santa Fe. Ten years later its lines stretched across Arizona and California to the Pacific, leaving Santa Fe at the dead end of a short branch. The railway company, however, kept the beautiful name as a talisman. The slogan on the cover of the 1946 annual report is "Santa Fe, all the way" and, when Mr.





Sketch map showing the Atchison, Topeka & Santa Fe Railway System

James Marshall wrote the story of the company's expansion, he called his book "Santa Fe—the Railroad that Built an Empire."\*

Through the courtesy of Mr. Lee Lyles, Assistant to the President, in charge of Public Relations, A.T. & S.F.R., we have had an opportunity of reading Mr. Marshall's account of 100 years of railroading in territory mainly west of the Mississippi. In all fairness, it may be termed an excellent piece of American journalism, "chatty, anecdotal, breezy," as the jacket says. Mr. Marshall has a keen eye for picturesque incident, and spots the dramatic features in events like the development of Oklahoma. Yet he has taken a great deal of trouble to collect the facts and figures on which he founds his story, and much solid information about the Santa Fe is condensed into nine appendices. With the aid of these addenda and the wealth of statistics which is common property in the U.S.A., we can gather a clear idea of the scope of operations on this typically American railway.

The accompanying table gives for the four largest systems in the States:—

- (1) The mileage of first track operated;
- (2) operating revenues from freight and passengers, with a total which includes revenue from express, mails, and miscellaneous sources; and
- (3) net railway operating income.

The figures are the latest to hand from the Association of American Railroads and cover the period of 4 months ended April, 1947.

RAILWAY POSITION AT END OF APRIL, 1947

	Mileage operated	Operating revenues (millions)			Net Railway operating income (millions)
		Freight	Passenger	Total	
Pennsylvania ...	10,120	\$ 210	\$ 51	\$ 284	\$ 2.4
New York Central ...	10,750	162	38	222	4.6
Southern Pacific ...	12,550	136	20	168	15.0
Santa Fe ...	13,100	109	15	136	15.4

The Santa Fe, with the longest mileage, comes fourth in order of revenue-earning power, but heads the field for net operating income. For the time being the Pennsylvania is overwhelmed by an extraordinary increase in operating expenses. Its operating ratio of 88 per cent. compares with 84.6 for the New York Central, 77 for the Southern Pacific, and 76 for the Santa Fe. For the first time in history the Pennsylvania had a

deficit in 1946, whereas the Santa Fe had a return of 3.2 per cent. on property investment. The situation seems absurd, because the Pennsylvania worked 16,500 net ton-miles per mile of road per day and the Santa Fe only 6,672. The density of passenger-train traffic on the eastern railways is also nearly three times as great as on the western line. One explanation is that the Santa Fe is exceptionally self-contained. Almost three-quarters of its normal tonnage originates on its own line; almost 65 per cent. of the tonnage terminates there. Last year, States served by the Santa Fe produced 63 per cent. of U.S.A. wheat and a large proportion of other agricultural products, including fruit. The single State of Texas sometimes produces more wheat than the whole of Canada. Bumper crops are expected this year, and to cope with the harvest the Santa Fe has one of the newest stocks of box wagons in America. At the end of 1946 it owned 81,300 wagons of all types, 5,100 more than it had in 1940. National arrangements for pooling box wagons were adopted as a wartime measure and are still in effect. These deprive progressive railways like the Santa Fe of the full benefit of their enterprise in purchasing new wagons.

Transits over the Santa Fe are long, both for goods and passengers. In 1946 the average haul of a ton of freight was 533 miles and the average passenger travelled 588 miles. Operating conditions favour the use of diesel-electric power. One of Mr. Marshall's chapters heralds the coming of the new locomotives, first to work passenger trains and then to haul freighters. The factor of distance also makes catering a matter of prime concern, and the Santa Fe still conjures with the name of Fred Harvey, the first manager of its "eating house and dining department," who has another chapter all to himself. We learn that "he believed in offering the best food obtainable, in bounteous quantities, served by young ladies of impeccable character." And again, we hear that "true to Harvey tradition, no diner, no eating house ever served a cold-storage egg." To this day Harvey's descendants supervise the hotels and restaurant cars on the Santa Fe, reminding us of the Towle regime on the old Midland Railway.

This lively history of the Santa Fe is illustrated by 32 pages of pictures. These include portraits of the Presidents of the system from 1895 to date. Of Mr. Fred G. Gurley, who became President in 1944, our author says that "in addition to being an outstanding executive, he is a specialist in motive power, and when he cannot be found in his Chicago office, it is a safe bet that he is out on the line, riding one of the big diesel-electrics." We imagine that Mr. Gurley is more likely to be in Washington on business connected with the Association of American Railroads or the Interstate Commerce Commission!

\* "Santa Fe: the Railroad that Built an Empire," by James Marshall. Random House Inc., New York. Price \$3.75

## LETTERS TO THE EDITOR

*(The Editor is not responsible for the opinions of correspondents)*

## Pioneer Main-Line Electrification

Mersey Railway Company,  
General Manager's Office, Central Station,  
Birkenhead. August 27

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—With reference to the letter from Mr. George Dow published in your issue of August 8, regarding the electrification of the North Eastern Line from Newcastle to Benton and the L. & Y. Liverpool-Southport line, it is interesting to note that the first case of the electrification of a steam railway in this country was that of the Mersey Railway, the electric services of which commenced on May 3, 1903.

Yours faithfully,  
R. VARLEY

## Steam and Other Traction

Middle Creek, via Sarina,  
North Queensland,  
Australia. July 22

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—With your permission, I would like to give my views concerning electrification and dieselisation schemes. Why anyone wants to eliminate the beautiful and interesting steam locomotive from certain areas is something I cannot understand, especially when it is much more efficient than any other type of railway motive power.

In the U.S.A., where both coal and fuel oil are obtainable, coal is still the cheaper fuel per B.Th.U., and the steam engine is more economical than either electric or diesel-electric locomotives. The difference in costs in favour of the steam engine must surely be much greater in Great Britain, where imported diesel fuel costs, I believe, £8 10s. a ton, whilst a plentiful supply of excellent coal is there for the digging—plus a little transport.

It seems to me to be a great pity that these very costly schemes of substituting electric and diesel-electric motive power for the genuine railway engine are undertaken, especially at a time when Great Britain's economic position is not very bright.

Yours faithfully,  
ROGER BOLAND

[Our correspondent has directed attention to the basis of Great Britain's troubles—excellent coal "is there for the digging."—ED., R.G.]

## High-Capacity Wagons

Hampstead, August 25

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—It is amusing to find Mr. E. R. B. Roberts reading an irrelevant lecture about wagon-loads [see our August 22 issue.—ED., R.G.] to your correspondent, who was concerned solely with agricultural traffic in Yorkshire; and then proceeding to misinterpret the official statistics. Mr. Roberts says that in 1938 the British average wagon-load was 7½ tons, with an average haul of 59 miles. He has quoted the average load, at starting point, instead of the "net ton-miles per loaded wagon-mile." That is the figure to be used with the average haul and puts the load at only 5.55 tons.

The corresponding 1938 averages which he gives for the U.S.A. railways do not agree with the statistics published by the Association of American Railroads. These give the 1938 wagon-load as 26 short tons, not 32, and the haul as 356 miles, not 351. It was not until the war years that the American load exceeded 30 tons: in 1943 it rose to 33 tons, and was 31 tons last year, when the average wagon capacity was over 51 tons.

Mr. Roberts then states that in both countries 90 per cent. of the tonnage consists of minerals and heavy goods. Actually, merchandise and livestock loading to no more than 3½ tons a wagon on an average, constituted 23 per cent. of our tonnage last year and represented 35 per cent. of the total freight ton-miles. These percentages have advanced as the coal output has declined and are likely to increase further if the Government's plans for locating light industries in development areas succeed.

Mr. Roberts is equally unhappy in his reference to less-than-wagon-load traffic in America. Last year's forwardings of about 23,000,000 tons were a small fraction of the aggregate tonnage, but required 6,336,000 wagons out of a total of 41,340,000 forwarded, or 15 per cent. In addition to this "small" traffic, there are large tonnages of light merchandise

passing in the States which give a wagon-load of only 12 or 13 tons. The effect is that gross ton-miles, based on the weight of wagons and contents, are more than twice the net ton-miles. Even in America, with bulk transactions dwarfing our retail consignments, the indiscriminate use of large wagons has drawbacks.

The position in this country was summed up conclusively in your editorial of July 11—at least for everybody except Mr. Roberts, who appears to understand neither the working of our goods tranship traffic nor the arrangements for carrying parcels by passenger train, which add much to the comfort of living at country towns like St. Neots.

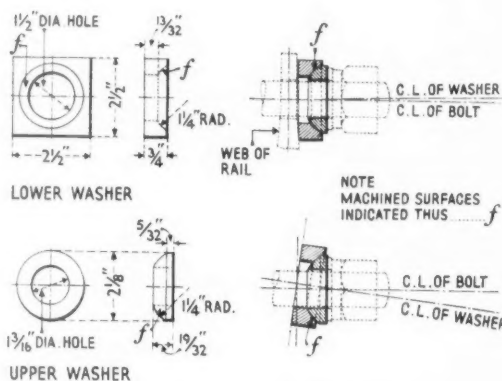
Yours faithfully,  
STATISTICIAN

## Permanent Way Crossing Bolts

c/o Rendel, Palmer & Tritton,  
55, Broadway, Westminster,  
London, S.W.1. September 5

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I was interested to see the universal washer, in use on the L.N.E.R. since 1944, illustrated and described in your issue of July 25. I enclose a drawing of a similar spherical washer, T.023, standardised on Indian railways in 1931.



In the L.N.E.R. pattern the ball-and-socket principle is the reverse of that in the Indian pattern in order to accommodate the square portion of the bolt shank. Washer T.023 can be used in crossings and switches having angles of 1 in 3 and flatter. Round shank bolts are used in India.

Great minds think alike!

Yours faithfully,  
N. H. COUR-PALAIS

## Inner Circle Service

12, Briar Road,  
Kenton,  
Harrow. September 11

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I read Mr. Brebner's reply in your August 22 issue to my letter, published on July 18, with interest, and I will not debate the question of seating on Praed St. Station, which I raised in a rather facetious manner, although I feel that the number of seats could be increased for the comfort of the travelling public.

The main issue is the numerous delays, and while admitting the correctness of Mr. Brebner's statement of the stalled train at Moorgate on the date I specifically mentioned, news of which reached me after I had posted the letter, it does not absolve the L.P.T.B. of responsibility. With stations linked by telephone, and with the prospect of a fairly lengthy delay, why were the waiting passengers not informed, in order that they might choose some alternative means of transport, if they so desired?

In fairness to the L.P.T.B., I would add that the L.M.S.R. electric services are worse offenders in keeping the passengers ignorant of mishaps, and I have asked them already to be less secretive.

Replying to Mr. Brebner's last paragraph, even now no porter is ever seen on the westbound platform until after a train has stopped in the station.

Yours faithfully,  
L. P. WALTER

## The Scrap Heap

### SLEEPING BERTH PRIORITY

Of a weekly total of over 7,000 first class berths on all routes the number allocated by the companies to the public amounts to 80 per cent. In comparison priority passengers receive the following allocations:—Business and professional men, 13 per cent.; Ministers and Members of both Houses of Parliament, 5 per cent.; senior officers of the fighting services, 1·2 per cent.; senior civil servants, 0·8 per cent. Any priority berths not required are released to the railway companies at least 24 hours before the train departure times.—*Mr. F. G. Humphrey, Director of Information, Ministry of Transport, in a letter to "The Times."*

### Caledonian Centenary

Though we may call September 10 (1847) the birthday of the Caledonian Railway, its roots go back much earlier. It is, in part, formed of the Forth & Clyde Canal, which the Act of 1768 calls a "navigable cut." The first passenger line (at Monkland) was founded in a cottage at Gartsherrie in 1823, at a meeting attended by such famous Glasgow names as Tennant, Dixon, Merry, and Baird. This, and other early ventures, passed into the hands of the Caledonian at its birth, in 1845. . . .

On several occasions in the early days, all was nearly lost for want of funds. In 1840, a deficit of £27 13s. 10d. is reported, and an effort to raise £150 ensues. In 1841, funds dry up, and Mr. Hope Johnson, M.P., gives £25, and five others £5 apiece; and in 1844 a meeting of "landed gentry" at Lockerbie raises £260. . . .

Very early in its career, the C.R. showed signs of the very energetic policy which marked its whole life, since it had the audacity to display the coat of Arms of the King of Scotland on its coaches. Had the Lord Lyon King-of-Arms got to work, a standard fine of £8 6s. 8d. a time would have cost the C.R. a pretty penny. . . .

The C.R. has been in the forefront of locomotive fame since 1886, when No. 123 came into view at the Edinburgh International Exhibition, where she got a gold medal, and the admiration of Queen Victoria. Her daily feats in the "Railway Race" from London to Edinburgh, in 1888, were to bring the West Coast train from Carlisle to Edinburgh (about 100 miles) in practically 100 minutes. I took some trouble to have her preserved at St. Rollox in her old blue livery. . . .

The sonorous C.R. buzzer horn was put on by my friend, Dougald Drummond, and was copied from the Clyde steamers, which he knew as a boy, as his father lived at Bowling-on-the-Clyde. They now sound from Euston to Wick, as my friend, Sir William Stanier, made them standard on the L.M.S.R. . . .

Thus we come to the Centenary of the Caledonian Railway. The main line to Glasgow, and the branch to Edinburgh, were opened on February 15, 1848, and connections made with Aberdeen, via the Scottish Central and Scottish North Eastern railways, by 1850. In the end, the C.R. was a mixed bag of snippets, 30 separate companies being conjoined by 1887, under 228 Acts.—*Extracts from an article by Mr. Norman Doran Macdonald, reproduced from "The Scotsman."*

### BY INLAND WATERWAY ACROSS SCOTLAND

Before the coming of railways, transport services across Scotland were provided on the Union and Forth & Clyde Canals, with one terminus at Port Dundas (Glasgow). The following early notice displayed at the Caledonian Railway centenary celebrations in Glasgow last week shows some of the journey times:—

#### EARLY 19TH CENTURY PRIOR TO THE OPENING OF THE RAILWAYS

Passage boat from Port Dundas:—  
To Edinburgh in 7½ hours at 7 morning; 10 forenoon; 4 afternoon.

Cabin: 6s. Steerage: 4s.  
To Stirling in 4 hours. 7 morning; 10 forenoon; 4 afternoon.

Cabin: 4s. 6d. Steerage: 3s.  
To Alloa in 5 hours. 7 morning; 4 afternoon.

Cabin: 5s. Steerage: 3s. 6d.;  
To Falkirk in 3½ hours. 7 morning; 10 forenoon; 4 afternoon.

Cabin: 3s. Steerage: 2s.

### GIFT TO YORK RAILWAY MUSEUM

An interesting gift has been made to the Railway Museum at York. It is a lithograph drawn on stone by G. J. Frankland from a contemporary drawing by a Mr. J. Green, Architect, of Darlington, of the Northallerton Station of the period of 1845 when it was operated by the Great North of England Railway. The picture has been given as a parting gift by Mr. Ernest Beecroft, of York, who retired recently after 45 years of railway service.

Mr. Beecroft says that the picture came into his possession after the death of his father, Mr. Thomas Beecroft, who retired in April, 1913, after 20 years as Station-master at Northallerton.

### 100 YEARS AGO

From THE RAILWAY TIMES, Sept. 18, 1847

**CALEDONIAN RAILWAY.—NOTICE.**  
—2½ Shares.—A few scrip notes of the £25 shares of the Caledonian Railway Company not having been sent in for registration, the holders are informed that unless they are forwarded to this office for that purpose on or before the 30th September current, the shares will be registered in the names of the parties to whom they were originally allotted.

J. W. CODDINGTON, Secretary.

Office, 129, Princes-street, Edinburgh,  
September 15, 1847.

### SOME RAILWAY MEMOIRS—6

By Sir Sam Fay

Upon the opening of automatic signalling at Grateley, Mr. Chauncey Depew, of the U.S.A., a popular and vigorous man, referred to me as "that criminal Fay." I had brought Automatic Signalling from America.

Champagne provided by the signalling company proved too enticing; the waiters got drunk and rolled out underneath the tent. A local paper said I was as bright and smiling as the morning itself. . . .

We ran a number of excursion trains to seaside places. They were successful: too successful in one case. Seaton was a favourite spot: five trains ran on one Sunday. The passengers ate up all the food in the place.

This brought down the wrath of Colonel Williams upon my head. He raised the question of Sunday excursions in general before the Board; the Court of Directors they called themselves. Colonel Williams spoke for half an hour, standing—no one spoke at the Court sitting down. The result was that Sunday excursions were prohibited except to inland stations. This stopped what had become a substantial source of income. . . .

### GRAND CENTRAL STATION, NEW YORK

On July 3 the number of passengers using the Grand Central Station, New York, exceeded a quarter of a million for the first time on record. The actual number of people arriving or departing by train during the 24 hr. was 252,251. Of that total 139,621 travelled by the New York Central and 112,630 by the New York, New Haven & Hartford.

Recently, an enthusiastic American author, David Marshall, called the Grand Central the most famous railway station in the world and went on to say: "It's a big place of course. But it is less remarkable for its daily average of 600 trains and 180,000 passengers; more remarkable for its daily average of 370,000 people who simply walk through."

### Swiss Railway Centenary Stamps



Series of four stamps issued by the Swiss Confederation in connection with the centenary of the Swiss railways. The 5c. stamp is green and shows the original locomotive "Limmat"; the 10c. is brown; the 20c. orange; and the 30c. stamp is blue



## OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

### SOUTH AFRICA

#### The Railway Year, 1946-47

Railway accounts for the year ended March, 1947, closed with a net surplus of £140,716. The result is that the railways are better off than was expected by more than £210,000, for, when presenting his budget to Parliament early this year, the Minister of Transport forecast a net deficit of £70,000. The year 1945-46 closed with a deficit of £1,870,088.

October, 1946, was the turning point in the financial year, September having closed with an accumulated deficit of nearly £873,000. Notwithstanding the revised tariffs, which came into operation in September, the result of that month's working showed a deficit of £557,805 for all services. Finances for October showed a marked improvement, and the month ended with a surplus of £390,095. From then on there was a general improvement, and the accounts for October, November, and December converted the accumulated deficit into a surplus of £24,105 by the end of 1946. At March 31, 1947, the accumulated surplus was £140,716.

#### Natal System Improvements

More than £10,000,000 will be spent on improving and developing the Natal railways in the next few years. Apart from the amount of over £4,000,000 to be spent on the new Durban bayhead marshalling yard and railway workshops, on which steady progress is being made, a further £4,000,000 will be needed for doubling 90 miles of single line between Pietermaritzburg and Ladysmith (see *The Railway Gazette* of January 17). Work has begun already on two sections. Tenders have been called also for the construction of four bridges across the Umbilo River, three of which are to replace road and rail bridges, and one is to link the new workshops with the marshalling yard. This is the first direct step towards quadrupling the Durban-Rosburgh section of the line at a cost of over £580,000.

The introduction of 17 deviations to reduce gradients and curvature on the line between Bellair and Hillcrest is a preliminary step towards the electrification of this section. Owing to the delay in acquiring electric stock for the Natal suburban electrified system, it is not expected that the Durban-Hillcrest line will be ready for electric traction for about 2½ years. The deviations will be completed before that time, and the line improved for faster service.

One of the first large undertakings on the section of the Ladysmith main line between Pietermaritzburg and Mooi River is the driving of a twin tunnel near Tweedie. Some years ago, before the introduction of electric traction, a start on a second tunnel was made, but with the introduction of electrification work ceased. It now will be resumed to help in meeting the heavy traffic demands that are being made on this section of the Natal system.

### IRAQ

#### Expenditure on Railway Equipment

A budget was passed recently by the Iraqi Parliament in which about £1,250,000 was allocated for transport purposes, including civil and mechanical engineering work on railways. It has been decided to complete three main railway bridges across

the Tigris, the Euphrates, and the Greater Zab (a tributary of the Tigris, north of Baghdad). This work will require an expenditure of £400,000.

In addition, it is proposed to allocate £150,000 to complete the railway extension between Kirkuk and Arbil; and to make a further provision of £20,000 for the construction of the Kerbala-Najaf-Kuffa extension line.

Other sums involved are: £330,000 for the purchase of air-conditioned coaches; £30,000 for station buildings; and £30,000 for the building of official quarters for railway staff.

### PALESTINE

#### Staff Officer Appointed

In order to deal successfully with the increasing problems of staff management, and the complications arising from widened conditions of employment, pensions and provident fund schemes, welfare, and

train, including the dining and sleeping cars, remained intact. Except for bruises, no passengers were injured. The Jewish driver of the locomotive, however, was trapped in the cab, and died before he could be extricated.

Salvage operations were begun immediately, and alternative arrangements were made to work passengers forward by road. The track was cleared and repaired by 7 p.m. the same day.

Two Jewish youths, the perpetrators of the act, were caught by mounted Arab Police shortly after the explosion.

### U.S.S.R.

#### New Line for Uzbekistan

A new railway, 373 miles long, is being built in South-West Asia from Chardzhui, in Uzbekistan, to Kungrad, on the western branch of the delta of the Amu Darya River where it flows into the Aral Sea. Chardzhui is on the railway from Merv to Bokhara, where it crosses the Amu Darya River. That railway is one section of the trunk line from Krasnovodsk (on the eastern shore of the Caspian

#### Cairo-Haifa Express Derailed by Mine



Breakdown cranes preparing to lift the locomotive of the Cairo-Haifa express, which was derailed when the track was mined by terrorists

similar matters, a special staff branch has been formed and a Chief Staff Officer appointed. He is responsible direct to the General Manager, and will co-ordinate existing machinery for dealing with staff problems affecting different grades. It is hoped that the appointment will facilitate handling of staff matters generally, and result in more economic staff management.

#### Track Mined Under Haifa Express

After several abortive attempts, and in spite of intensive Army patrols, terrorists in Palestine again succeeded in blowing up the main Cairo-Haifa passenger train a short distance north of Lydda Junction at 10.15 a.m. on August 9. A contact mine exploded under the engine, which became derailed, ploughed up the track for approximately 100 yd., and turned over on its side at a right angle to the track.

Five coaches full of troops next to the engine were derailed badly, but did not overturn. The first three coaches were Egyptian State Railways stock of steel construction, and the other two were P.R. firsts and seconds. The remainder of the

Sea) to Tashkent, the capital of Uzbekistan, a distance of about 1,100 miles.

Construction of the new line is to be taken in hand in the near future. It will follow, in the main, the course of the Amu Darya, and will serve Khiva, capital of the former Khanate of Khiva (now a part of Uzbekistan). The railway will be of importance to the development of the extensive cotton cultivation and production of hemp, wheat, rice, and silk for which Uzbekistan is noted.

### FRANCE

#### Paris Metro Passenger Traffic

The Paris Metropolitan Railway and bus services carried 600 million passengers in the first quarter of 1947, compared with 400 million in the first three months of 1938. This increase of 50 per cent. in traffic has been achieved by improved organisation, with vehicular resources far below the equipment available before the war.

The Metro mileage has increased from 110 in 1938 to 116 at the present time.

While the rolling stock remains at virtually the same level as before the war, the number of passengers has doubled. In order to deal with the increased traffic under the best possible conditions, the management has followed a policy of reducing the time coaches are kept under repair to a minimum, which has enabled it to increase by 33 per cent. the number of trains running in the rush hours.

#### First Class Restoration Proposal

A recent vote by the Paris Municipal Council decided to restore first class fares on the Metro lines at a flat rate of fr. 8 (4d. at the official exchange rate). Other coaches then would become second class again, probably at the current fare of fr. 4.

Two reasons are put forward for the council's decision. One is that a separate coach should be available for disabled ex-servicemen and infirm civilians; and the other is that the abolition of first class has involved a yearly financial loss of fr. 500 million (rather more than £1 million), which the council seeks to make good.

It was learned on inquiry that the Metro management was not inclined to favour the restoration of first class for operating reasons. If the middle coach in a train of five is reserved for a minority paying the first class fare, the other four coaches must then cope with the bulk of the traffic. In the three-coach trains there will only be two coaches available for the rush traffic. The ultimate decision rests with the Ministry of Transport.

### CANADA

#### C.P.R. Expenditure Programme

During his first official inspection trip in the West since assuming office, Mr. W. M. Neal, Chairman & President of the C.P.R., announced that orders had been placed in August for new locomotives and wagons at a cost of more than \$22,500,000. With orders already under way, this brings the total expenditure for rolling stock during this season to more than \$47,000,000.

"It is a lot of money," said Mr. Neal,

"and the company is discounting the future heavily in expending it, while the railways are still awaiting relief from the present inequitable balance of soaring costs of material and labour, with a low fixed revenue. It reasonably might have been expected by this time that a favourable decision on the railways' current application for adjustment of freight revenue would have been made. However, that has not been the case. Accordingly, the Canadian Pacific has been forced to anticipate the time when relief may be obtained, and to tax its diminishing reserves to a danger point to carry on services which cannot now be maintained out of current revenue."

Appropriations of \$11,755,000 for 1,675 wagons and of \$11,000,000 for 63 steam locomotives had been approved, and orders were being distributed. This large amount was additional to equipment orders of more than \$24,000,000 for coaches and for 13 diesel-electric shunting locomotives approved last March. The 1947 equipment programme of the Canadian Pacific now stood at more than \$47,000,000, of which all monies would be spent in Canada with the exception of \$1,430,000 for diesels.

### UNITED STATES

#### New Erie Station at Akron

After the opening of the new Erie Railroad station at Akron on July 16, Mr. Robert E. Woodruff, President of the system, drew a contrast between the methods of providing railway stations and airports. The new station, he said, had been built on Erie land, with Erie money, and the Erie would pay increased taxes to the municipality because of its having been built. On the other hand, when Akron was provided with an airport some years ago, about \$4 million was spent for the purpose out of taxpayers' money. Only about 40 per cent. of the operating cost of the airport was said to be derived from the nominal sums paid by the air transport companies using it; the rest of the expense came out of the pockets of the taxpayers, including the

railways. In contrast to this, railways in Akron paid \$193,000 to the city during 1946, part of which was used for maintaining the schools, government, and airport in the city.

#### Goods Station Loudspeakers

A system of 40 loudspeakers and 22 telephones has been installed throughout the platform and warehouse areas of the Missouri Pacific goods station at Kansas City. Instructions to members of the staff are broadcast over the loudspeakers, and acknowledged by means of the telephone sets, which are placed at intervals of about 200 ft. Calls from the staff to the office are made on the telephones, and are heard in the office on a small loudspeaker, which obviates the need of bells and other warning instruments.

#### Petitions Against Signalling Order

Several petitions have been presented to the Interstate Commerce Commission against its order of June 17, requiring railways to install A.T.C., cab signalling, or automatic block signalling on lines over which high-speed trains are run. Among recent petitioners, the Illinois Central seeks permission to operate certain trains at speeds of 80 m.p.h. or more with its existing automatic block signal system. The Great Northern is asking authority to operate the "Empire Builder" at a speed not exceeding 80 m.p.h. on certain sections where it is claimed that the provision of automatic cab signalling would cost \$2,176,950.

It is stated by the Chicago, Burlington & Quincy that the cost of installing train stops, A.T.C., or cab signals on portions of its line over which trains are operated at 80 m.p.h. or more would range from \$877,055 to \$6,430,160, and the company points out that all but six miles of the Lincoln-Denver line are protected by C.T.C., the short section to which this does not apply being operated under the manual block system. Among other systems which have petitioned the commission for modifications of the order are included the Southern Pacific, Union Pacific, Chicago & North Western, and the Santa Fe.

### Publications Received

**Railways of Britain.** By C. F. G. Cooper. London: *Daily Mail School-Aid Department*. New Carmelite House, London, E.C.4. 9½ in. × 7 in. Illustrated. Price 1s. 6d.—For many years it was considered among the teaching profession that their pupils would acquire a knowledge of railways by their own efforts, and, indeed, the introduction of railway literature into the classroom was, on the whole, deplored as a distraction from more orthodox studies. In these days the existence of rival interests to the railways may result in a pupil leaving school better informed regarding stages in the contest for the world air speed record than on the development of the transport system which did so much for the one-time prosperity of this country. The *Daily Mail*, therefore, is issuing a series of School-Aid booklets entitled "Railways of Britain," the first of which deals with Southern England from the days of the Surrey Iron Railway to the "Golden Arrow."

The story of railways south of the Thames is told with illuminating detail and a wealth of illustrations. The appeal to boys of railway locomotives, old and new, is well understood, and numerous

prints of historic engine classes are reproduced. The general railway scenes, also, are chosen from a wide field and present an interesting survey of developments in station buildings and rolling stock.

Now that this series has been launched, it should not be long before the names of Adams, Stroudley, and Urie, and their dates of office, become as familiar in the history classroom as the titles and reigns of the early Norman kings.

**The Alford & Sutton Tramway.** (Locomotion Papers No. 1). By George Dow. Chislehurst, Kent: The Oakwood Press, 30, White Horse Hill. 7½ in. × 4½ in. 20 pp. Illustrated. Paper covers. Price 2s. 6d.—Some interesting corners of transport history would remain unrecorded were it not for the enthusiasm of the few who are willing to undertake the necessary research completely regardless of commercial considerations. This booklet represents such work, and it has been done well. Sutton, on the Lincolnshire coast, received its first rail access by means of a steam tramway from Alford Station, of a type that in other countries would be termed a secondary or light railway. It had a life of only five years (1884-1889) and is long since forgotten. It was super-

seded by the main-line railway through Sutton, which crossed the tramway by a right-angle level crossing just outside the town; Tramway Crossing signal box survives as the only memorial of the older line. Mr. Dow has delved deeply to make his story comprehensive, and his brochure is all that can be desired as a record of this little undertaking.

**Midyear to Midyear Calendar.**—For many years the American Steel Foundries of Chicago have produced a calendar beginning halfway through the year, and illustrated with admirable reproductions of early railway prints. We have just received a copy of the calendar for July, 1947, to June, 1948, printed on the customary large-sized monthly sheet, each of which contains a coloured reproduction of an early railway print, and, underneath, the calendar for the month, the preceding month, and the succeeding month. Only two of the subjects are British; one is the Lickey Incline on the Birmingham & Gloucester Railway as depicted in a lithograph of 1840. Here, the American interest is that the first locomotives ever ordered by England from the U.S.A. were built by Norris to work the two-mile 1 in 37 gradient.

## Signal and Telecommunication Systems in New South Wales

*Various types cater for a wide range of traffic requirements*

*By W. F. Barton*

*Signal & Telegraph Engineer, New South Wales Government Railways*

THE article in *The Railway Gazette* of February 25, 1944, covering the telephone and telegraph systems on the London & North Eastern Railway, gave an interesting review of British railway methods, and has prompted the writer to prepare a short description of similar activities in operation in New South Wales, where, except in the vicinity of capital cities, there is not the call for such concentration of facilities as on the English and Scottish railways.

The railways of New South Wales radiate from Sydney, as the centre, to places as remote as Broken Hill, 701 miles, on the western system; to Brisbane, the capital of Queensland, on the north, 613 miles; to Bourke, also on the west, 512 miles, and to Albury, the border station between New South Wales and Victoria, on the southern system, 401 miles. The South Coast line extends to Nowra, a distance of 95 miles, and branch lines scattered over thinly-populated areas bring the total of the network to 6,127 route-miles, of which 45 miles are quadruple track, 657 double or treble track, and 5,425 single track. To provide communication systems to cover a railway over such distances has involved a heavy expenditure and a great quantity of material. The population of New South Wales is 2,870,000, 45 per cent. residing within 25 miles of the capital city, Sydney. The average number of staff of all grades employed on the railways is 51,168.

The city itself has an underground system of fast electric services serving the immediate suburban area, and carrying during the morning and evening peaks a total of 80,000 passengers per hour. The main administration offices are in Sydney. The Railway Department has its own telephone and telegraph systems, erects its own lines and wires, and installs and maintains its own cable systems entirely distinct and separate from the postal administration, although in the telephone services the systems are inter-connected.

### Signalling

Practically the whole of the railways are equipped with telephone train control, in addition to various forms of safe-working equipment. In the immediate Sydney electrified area, power signalling, electro-pneumatic and all-electric, with daylight colour-light signals and all-electric relay interlockings, provide the means of effectively safeguarding the intensive movement of trains.

Outside the electrified area the double-line sections are mainly controlled by automatic signalling. Block instruments and manual signalling are used only on those sections where stations on double line have to be staffed for general traffic business and where automatic and power signalling would not be justified. The traffic on single lines is controlled by electric train-staff instruments. On the fast section of 100 miles between Junee and Albury, on the southern system, where "limited" express trains pass through the crossing stations at high speeds, tokens are exchanged by automatic exchangers at speeds up to 70 m.p.h. In the sparsely-populated outlying areas, where traffic is light, automatic electric train-staff instru-

ments are worked by the train crews, and the crossing loops are designed and equipped with power-worked home signals and track-circuited in such a manner as safely to expedite train movement and effect crossings with a minimum of delay. The outstanding advantage of these automatic loops is that no staffing is necessary.

To provide communication systems to meet the exacting requirements of the New South Wales railway system has necessitated the installation of a cable system in the congested areas, with aerial lines on outlying sections. The pole line construction consists of wooden telegraph poles, mainly of ironbark timber, and the use of old rails; these rails are preferred on account of reduced maintenance cost, the wooden poles being subject to the ravages of white-ants, notwithstanding constant treatment with ant-resisting solutions. The approximate mileage of conductor lines on poles totals 36,000 miles.

In addition to the main automatic telephone exchange, branch P.A.B.X. switchboards are provided at suitable locations, the whole forming a network of a departmental telephone system comprising a total of 2,300 lines, to serve both the requirements of the headquarters administration organisation, with its ramification of departments and workshops and to link up with country areas.

The headquarters of the railway communication systems are located at Sydney railway station, where special rooms are set apart for the telephone, telegraph, automatic telephone exchange, and train control systems. The main telegraph office is equipped with 16 Morse telegraph circuits, three being operated as duplex, nine as double-current, and four as simplex. Thirty-four operators are employed to maintain continuous staffing, and the volume of railway business transacted between Sydney and Melbourne occupies a duplex line continuously.

The Sydney station automatic telephone exchange has a capacity of 1,250 lines, and is inter-connected with nine automatic branch telephone exchanges varying in capacity from 50 to 200 lines each. Staff connected to the railway automatic exchange can dial direct into the public telephone network, but calls incoming from the postal system to the railway automatic exchange have to be handled on a manual board. For the purpose of dealing with the 50 incoming junctions from the postal system, and to provide for the departmental omnibus telephone circuits and trunk lines, the manual board has seven ordinary positions and one supervisor's position. Fourteen women telephonists and two men supervisors comprise the staff.

In addition, there are a number of 100-line and smaller-capacity manual switchboards for handling the trunk and circuit lines from various depot stations. The whole are inter-connected by means of junctions, and the calls handled at the main exchange average 34,000 per day on a Monday to Friday check, or approximately 9,000,000 calls per annum. This number does not include outgoing calls to the postal system, which are approximately 850,000 a year.

As distinct from the automatic telephone

exchange and the manual switchboard, a separate office houses the telephones connected to the omnibus circuits, and 26 women telephonists are employed to cope with calls from suburban stations and outlying points throughout the system.

The telephone train control is operated from nine centres within the system, employing in all 19 independent train control circuits serving approximately 1,200 individual stations.

At Sydney station, the South Coast, Western, Northern, and Southern train control systems are located in separate sound-proof rooms. In addition, a "trouble" office, fully equipped for telephone communication over the whole suburban area, is maintained to cope with emergencies that may arise within the congested network of the suburban railway system.

### Maximum Capacity

Having regard to the distances to be covered, every effort is made to obtain maximum capacity from the line wires provided for the various services. On the section between Sydney and Newcastle, a distance of 104 miles, there are four trunk line copper conductors, so circuited as to provide six conversational channels, three physical and three carrier, and four composite Morse telegraph circuits. Carrier channel installations serve to provide through telephone services between Sydney and the outlying depots on the main and branch lines. With these services communication is readily established with the departmental telephone network, thus enabling the central organisation to keep in constant touch with all limits of the system.

G.W.R. (LONDON) LECTURE & DEBATING SOCIETY.—The Society's programme of meetings for the session 1947-48 is as follows:—October 16, "The Trade of the Port of Cardiff" (illustrated by film), by Mr. D. G. Hoppins (Dock Manager, Cardiff & Penarth); October 30, "Brains Trust," questionmaster: Mr. H. G. Bowles (Chief Clerk, General Manager's Office); November 13, "Locomotive Maintenance Problems" (with lantern slides), by Mr. K. J. Cook (Works Assistant to C.M.E.); November 27, "Some Aspects of the Law of Transport by Railway," by Mr. R. G. Plowman (Common Law Assistant to Solicitor); December 11, debate with Southern Railway Lecture & Debating Society: "That First Class Travel should be Abolished"; January 1, "Zonal Transport—Its Aims and Achievements" (with lantern slides), by Mr. G. Cornish (Principal Assistant to Chief Goods Manager); January 15, "Modern Power Signalling" (with lantern slides), by Mr. J. F. H. Tyler (Assistant to Signal & Telegraph Engineer, Electrical Signalling); January 29, "Some Aspects of the Working of the Birmingham Traffic Division," by Mr. A. V. R. Brown (Divisional Superintendent, Birmingham); February 12, reading and discussion of prize essay: "Transport as a Factor of Production" (to be announced at the meeting on January 15); February 26, "The Compilation of the Passenger Timetable," by Mr. L. W. Edwards (Operating Assistant to Superintendent of the Line); March 11, annual general meeting, and young men's discussion. Membership of the Society, the Honorary Secretary of which is Mr. W. J. Jeffries (General Manager's Office, Paddington), is open to all grades of employees of the Great Western Railway in London and to the salaried staff in the country. It has been decided to resume the prize-essay competition.



## New Passenger Stock for Southern Railway Waterloo-Bournemouth Service

*Latest steam sets incorporate modern kitchen and pantry equipment and tastefully decorated restaurant cars*

THE new Southern Railway six-car steam set recently placed in service between Waterloo and Bournemouth is the first of eleven being built in the Lancing and Eastleigh works to the design of Mr. O. V. Bulleid, Chief Mechanical Engineer. The new stock embodies many of the features of the first and third class composite (prototype coach) and the third brake, which were described and illustrated in our issues of October 12, 1945, and January 3, 1947.

Although intended primarily for the Waterloo-Bournemouth service, the stock is of such dimensions as will permit its working over all parts of the system without restriction, except the Tunbridge Wells to Hastings and the Canterbury to Whitstable Harbour branches. It was intended to have the sets working in this year's summer service, but this was not possible because of difficulties in obtaining material. Each set comprises the following coaches: Two third class brake compartment saloons; one first and third class composite; one third class open saloon; one first class compartment and saloon restaurant car; and one third class kitchen and saloon restaurant car.

In keeping with recent Southern Railway coach development, the bodies of the vehicles are radial sided, including the windows; the body framing is of 2-in. thick hard-wood timber faced on the exterior sides and ends with planished steel panelling, S.W.G. No. 18; the floors and roofs are timber. Doors of light pressed-steel design, with frameless drop windows, are fitted, and doorlocks of the Kayes type provide the necessary security for passengers.

The compartments have large fixed observation-windows, with two sliding glass-panels above. Each panel is fitted at its outer edges with plate projections, thereby ensuring adequate ventilation when the panels are in the open position.

The interior finish and decorative effect of the various coaches is achieved by the use of selected figured plywood panelling, cut or uncut moquette and floor coverings, shown in the table alongside.

Loose dining chairs, comfortably upholstered, furnish the saloon compartments of the restaurant cars, and thereby add to the convenience of passengers and refreshment service staff. Careful attention has been given to providing restful seats in the compartments, and they are hammock sprung and have insert cushions; liberal space is provided under the seats for heavy luggage.

Photograph and mirror frames are arranged above the seats, and the commodious luggage racks of cord netting supported by stainless-steel brackets, with umbrella hooks, are well adapted for taking passengers' heavy suitcases. Somewhat similar racks, running longitudinally, are fixed in the saloon compartments in the train. All interior fittings throughout the coaches are, as far as practicable, of stainless steel, among the advantages of which are lightness of design and reduction of weight.

The lavatories are similar for all vehicles; each is fitted with a waterseal w.c. pedestal, flushed with a new type of valve which permits a definite quantity of water to be discharged on movement of

the valve lever. By this device the usual cistern supply for this purpose is obviated. Rectangular wash-basins, fitted with hot and cold taps, are installed.

The walls of the lavatory compartments are lined with decorative Holoplast panels of mottled green; light and dark shades are used for the upper and lower panels respectively. This material is attractive in appearance and presents a surface which can be easily cleaned. Another step to increase passenger amenities is the illuminated "Lavatory" indicators which have been installed in the corridors.

All compartments, lavatories, and corridors are steam heated; this source of heat is locally in compartments under the passengers' control. In addition, electrically-heated foot-mats are placed between the compartment seats, giving a further source of comfort to passengers in cold weather. The maximum heat from the mats is slightly below blood heat; its effect, however, is appreciable. The current is obtained from axle-driven generators at 230 volts. In addition to the ventilators above the compartment windows, pre-

viously mentioned, extractor roof ventilators of the Torpedo type are fitted for withdrawing vitiated air from the saloon and other compartments.

Passenger inter-communication is by Pullman-type gangways; the stock is fitted with Laycock Buckeye automatic couplers, and extensible side buffers and screw couplings are also provided to meet traffic requirements when marshalling the stock with non-automatically coupled stock.

The lighting, so far as practicable, is uniform, and, in conformity with the expressed views of the public when inspecting the prototype coach, the compartments are equipped with individually-switched reading shoulder bracket lamps in addition to the general roof lighting. Current is supplied from axle-driven train lighting dynamos connected with a single battery system; the cells are the latest type, which do not require washing out. The regulators controlling the dynamos are placed inside the coach—an inspection convenience when travelling. Lighting control from the guard's van is achieved by pressing the appropriate button "on" or "off," and "D" type switches cut out should the battery voltage fall below 16 volts, thus preventing over-discharge and shortening of the battery life.

Fluorescent lighting is installed in the first class saloon of the restaurant car. To avoid projection into the car, the fittings are recessed into the ceilings and light

### INTERIOR FINISH AND DECORATION OF THE VEHICLES

#### Third Class Brake Compartment Saloons

Compartment .. ..	Panelling ..	Veneered panels Indian almond-wood, banding Nigerian walnut (stained).
Saloon and corridor ..	Panelling ..	African mahogany.
	Upholstery ..	Cut moquette of rust-brown shade with figured outline floral design. Blinds—green-shade Rexine.
Compartments .. ..	Flooring ..	Granite linoleum laid on Lloyd board sheeting.
Corridor .. ..	Flooring ..	Gesco cork tiles laid on Lloyd hardboard sheeting.

#### First and Third Class Composite

First class compartment ..	Panelling ..	Veneered panels East Indian satinwood, banding Indian silver greywood.
Corridor .. ..	Panelling ..	African mahogany.
First class compartment ..	Upholstery ..	Uncut green tapestry with foliage design in mixed cream and heather. Blinds—green-shade Rexine.
First class compartment ..	Flooring ..	Granite linoleum laid on Lloyd board sheeting with goat-hair rug in beige with green border bearing the company's monogram.
Corridor .. ..	Flooring ..	Same as third class brake compartment saloons.
Third class compartment ..	Upholstery ..	Same as third class brake compartment saloons.

#### Third Class Open Saloon

Saloon and vestibules ..	Panelling ..	African mahogany.
	Upholstery ..	Cut moquette of rust-brown shade with figured outline floral design. Blinds—green-shade Rexine.
Saloon .. ..	Flooring ..	Same as third class brake compartment saloon.
Vestibules .. ..	Flooring ..	Coir mat sunk into and flush with floor.

#### First Class Compartment and Saloon Restaurant Car

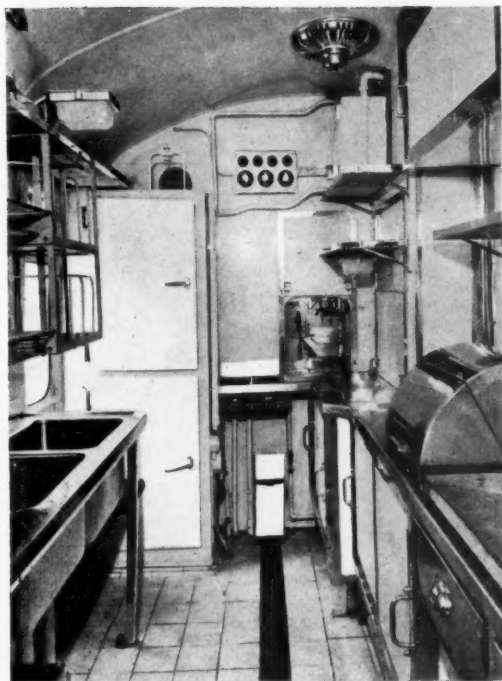
Compartments .. ..	Panelling ..	Veneered panels East Indian satinwood, banding Indian silver greywood.
Corridors .. ..	Panelling ..	African mahogany.
Saloon .. ..	Interior ..	Walls and ceilings, off-white Rexine.
	Chairs ..	Nigerian walnut, trimmed in uncut green tapestry with relief floral design in fawn.
Saloon .. ..	Tables ..	Glass top with neutral-shade material underlay with a neat painted design on the underside of the glass. Stainless-steel edges.
Saloon .. ..	Flooring ..	Maroon-colour pile carpet having mixed-colour outline leaf design with felt underlay on Lloyd hardboard panels.
	Curtains ..	Green silk hung from pelmets. Green Rexine blinds.
Compartments and corridor ..	Upholstery ..	Upholstery and flooring similar to composite coach.

#### Third Class Kitchen and Saloon Restaurant Car

Saloon .. ..	Panelling ..	Veneered panels Indian pyinma, banding Nigerian walnut (stained).
Corridor .. ..	Panelling ..	African mahogany.
Saloon .. ..	Chairs ..	Nigerian walnut trimmed with rust-brown shade moquette.
	Tables ..	Glass top with neutral-shade material underlay with a neat painted design on the underside of the glass. Stainless-steel edges.
	Flooring ..	Granite linoleum laid on Lloyd board sheeting with central runner pile carpet toning with chair moquette.
	* Curtains ..	Repp material, herringbone design to match colour of chair moquette.
Corridor .. ..	Flooring ..	Same as third class brake compartment saloon.



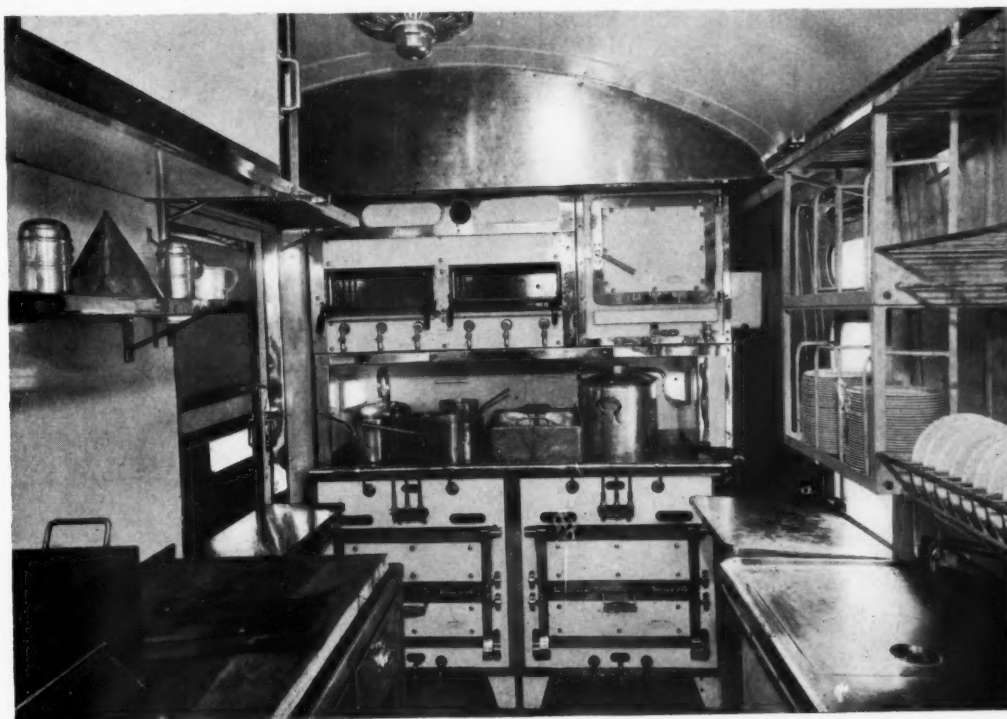
## New Passenger Stock for Southern Railway Waterloo-Bournemouth Service



*Interior of the kitchen unit*



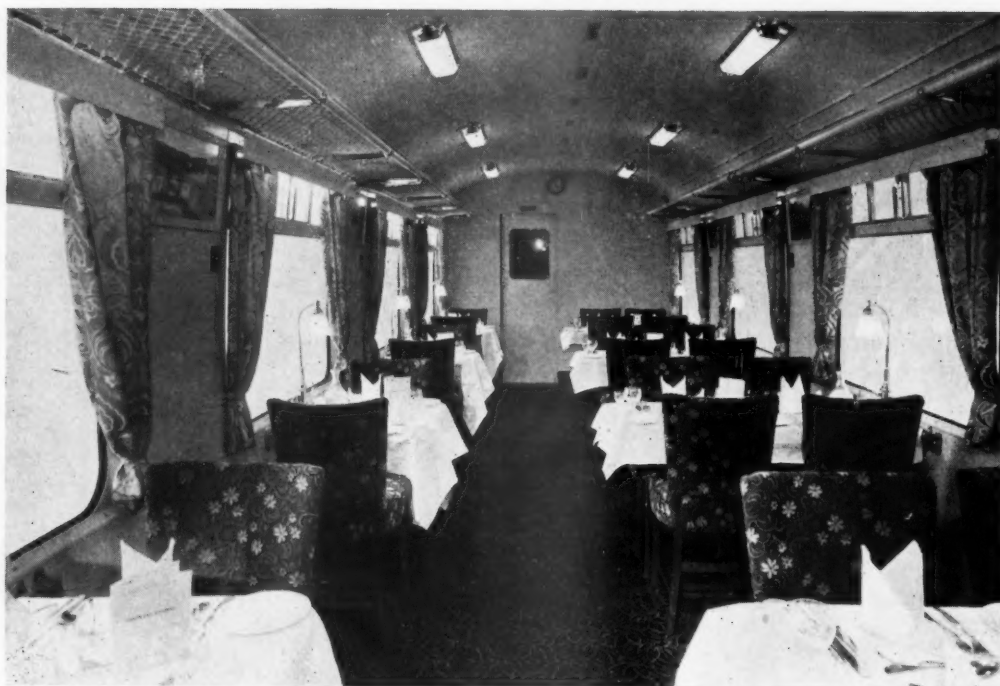
*Steam-heated corridor with sliding ventilators*



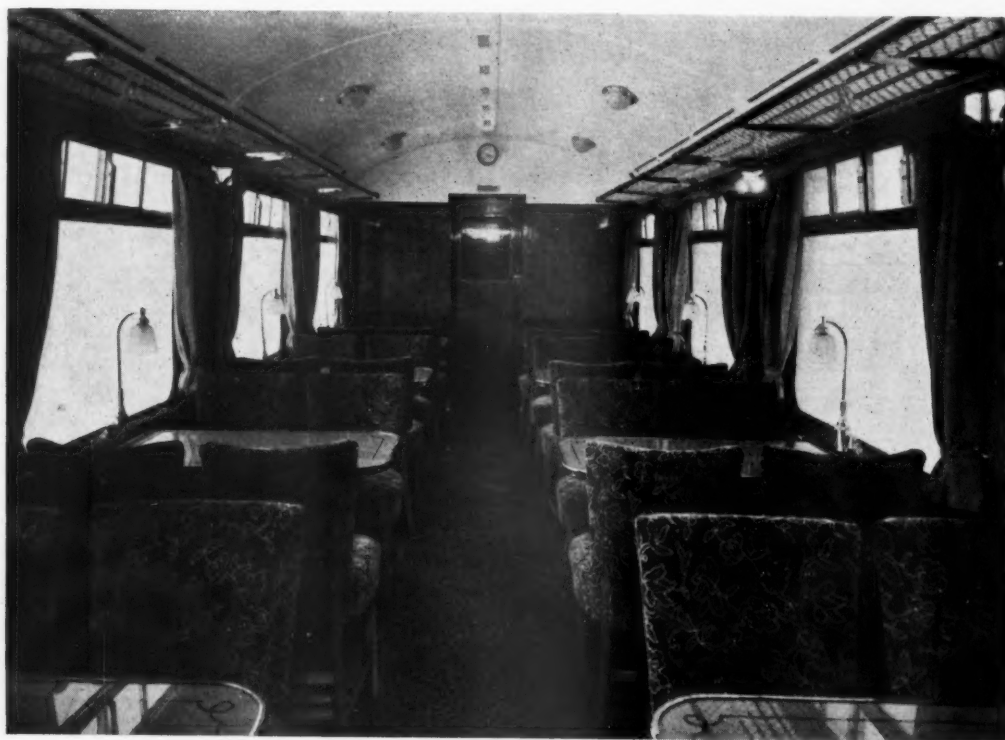
*The kitchen, showing the double oven, the doors of which are made in two flap portions*



### New Passenger Stock for Southern Railway Waterloo-Bournemouth Service



*A feature of the first class restaurant car is the fluorescent lighting, the fittings of which are recessed into the ceiling*



*The third class restaurant car, which has loose chairs, glass-topped tables, and table lamps giving additional illumination*

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## G.W.R. Steamer "St. David" for Passenger and Cargo Service

*After a short period on the Fishguard-Rosslare route this new steamer is engaged on the Channel Islands service*

IN the last week of July, as was reported in our issue of August 1, the new G.W.R. steamer *St. David* paid a courtesy visit to Cork, before starting on the Fishguard-Rosslare service for which she was built. Since then, however, this steamer has been switched from the Irish service to the Channel Islands service, for which work she is equally suited, replacing the *St. Helier* with the sailing from Weymouth on September 2, reported in our September 12 issue.

The new steamer was constructed by Cammell Laird & Co. Ltd., Birkenhead, a firm which has a long record of vessels

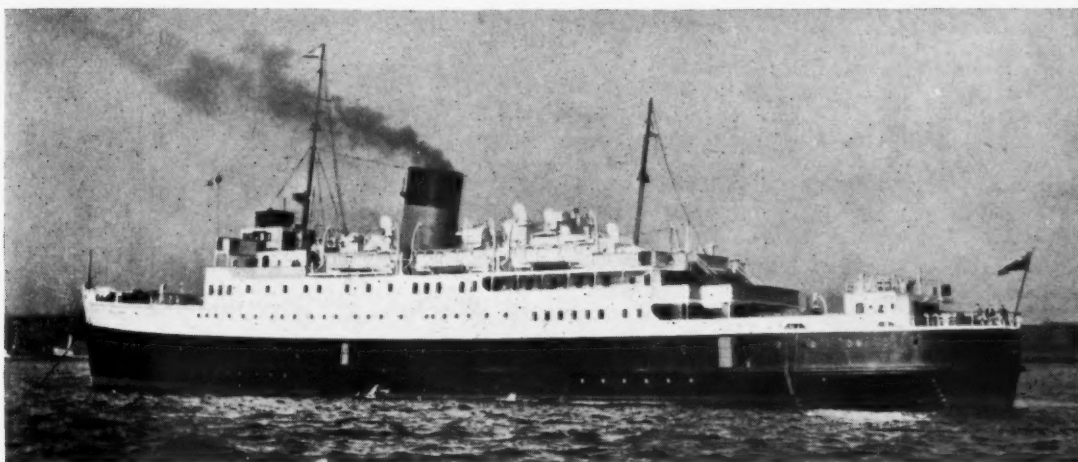
built for the G.W.R., commencing as far back as 1880. She was launched on February 6, 1947, by the Countess of Dudley, wife of the Deputy-Chairman of the G.W.R., and is 321 ft. long overall, has a service speed of 21 knots, and is of 3,250 gross tonnage.

There are four passenger decks, two holds to accommodate 350 tons of cargo, and a specially arranged deck space capable of accommodating 52 motorcars. The passenger accommodation is of the highest standard and considerable use has been made in the public rooms and cabins of polished hardwoods.

The whole of the passenger accommodation is concentrated amidships, the first class public rooms being on the promenade deck and those allocated to the third class on the shelter deck. In addition to a large lounge, a tastefully decorated smoking room and ladies' room are provided for first class passengers. At the after end of the promenade deck is the first class dining saloon, seating 52 persons.

A feature of the first class cabin accommodation is that special staterooms have been distributed on the promenade, shelter, and main decks, the design and position of these rooms having been varied to meet individual tastes.

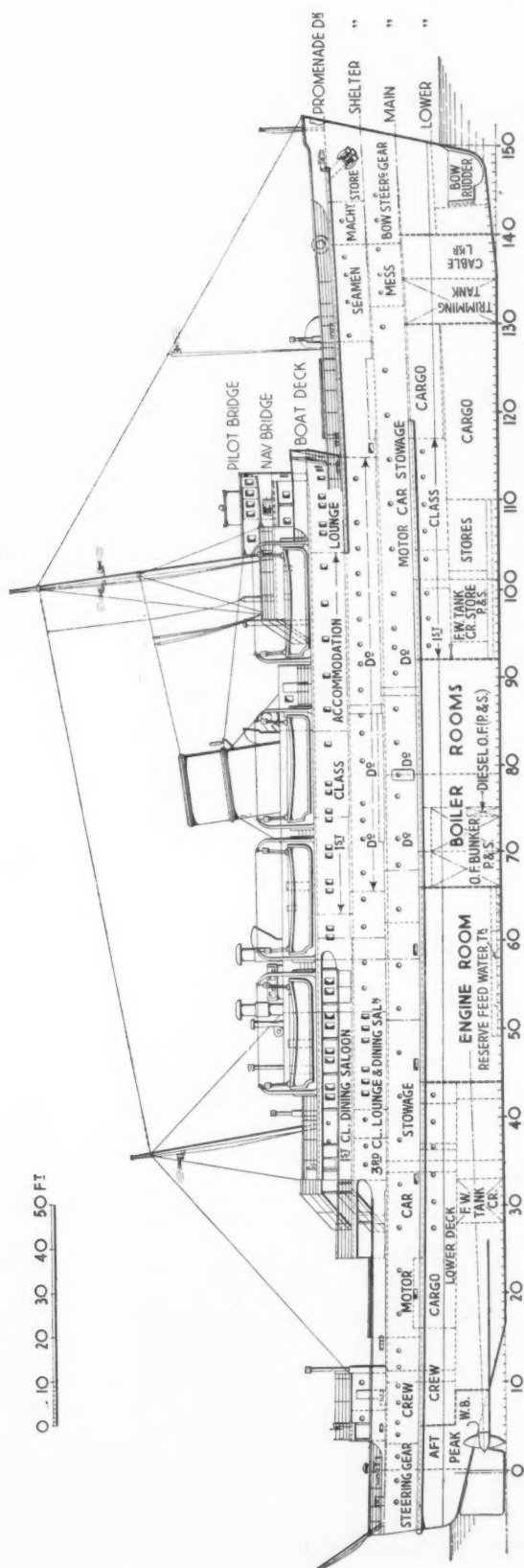
Accommodation for third class passengers is provided on the shelter and lower decks, where open-berth cabins are arranged for 102 passengers. The third class dining room situated on the shelter deck provides accommodation for 24 persons at a sitting.



*The new G.W.R. steamship "St. David" built for the Fishguard-Rosslare route and recently switched to the Channel Islands service*



*First class lounge of the "St. David" looking to starboard*



General arrangement of the G.W.R. passenger and cargo steamship "St. David" built by Cammel Laird & Co. Ltd.

Ventilation throughout is provided by the Winsor pleno-unit system, each cabin having a supply of fresh air the temperature of which can be controlled by the individual passenger. Exhaust ventilation is provided for public rooms, galleys, etc., and independent fans are fitted to ventilate the holds and motorcar decks.

A full service of hot and cold water is laid on to all cabins, and a large number of baths and showers installed. The main galley is equipped with an Esse range augmented by electric ovens and grills.

#### Fire Detection System

Special precautions have been taken for the detection and extinction of fires. In addition to a full service of fire mains, the *St. David* is equipped with a Rich-Kidde system of fire detection, the indicators being fitted in the wheelhouse. The more vulnerable spaces are provided with CO<sub>2</sub> gas smothering apparatus, and the boiler rooms are equipped with a Foamite system.

The propelling machinery, supplied by the builders, comprises two sets of double-casing Parsons turbines, aggregating 8,500 s.h.p. and driving twin screws through single-reduction gearing. The H.P. turbines are of the impulse-reaction type and the L.P. units are all-reaction. The astern turbines, giving 70 per cent. of the ahead power, are incorporated in both H.P. and L.P. casings.

Extensive use has been made of A.T.V. steel and stainless iron in the beading. The thrust block is of the Michell type, and the stern tubes, which are white-metal lined and oil lubricated, have their outboard ends sealed by rotary packings made by Benjamin R. Vickers & Sons Ltd. The propellers are three-bladed. Steam is supplied by three water-tubes of the Babcock & Wilcox type. These are oil fired on the latest Babcock system with a closed stokehold system of forced draught.

#### Electric Power

While at sea, electric power is provided by a turbo-generating set supplied by W. H. Allen, Sons & Co. Ltd. Port power is provided by two diesel-driven generators of the McLaren-Ricardo type.

The main condensers are of the regenerative type, and the vacuum is maintained by two Weir paragon air pumps, the circulating pumps being by W. H. Allen. Two Weir single-stage turbo-feed pumps are installed, and the feed on its way to the boilers is heated by a Quiggin heater capable of raising the feed temperature to 220° F. when supplied with exhaust steam only.

Special consideration has been given to the provision of comfortable quarters for the crew. All the officers are accommodated in single-berth cabins, and the remainder of the crew in single, two-berth, or four-berth cabins, each cabin being air-conditioned and provided with a separate electric heater.

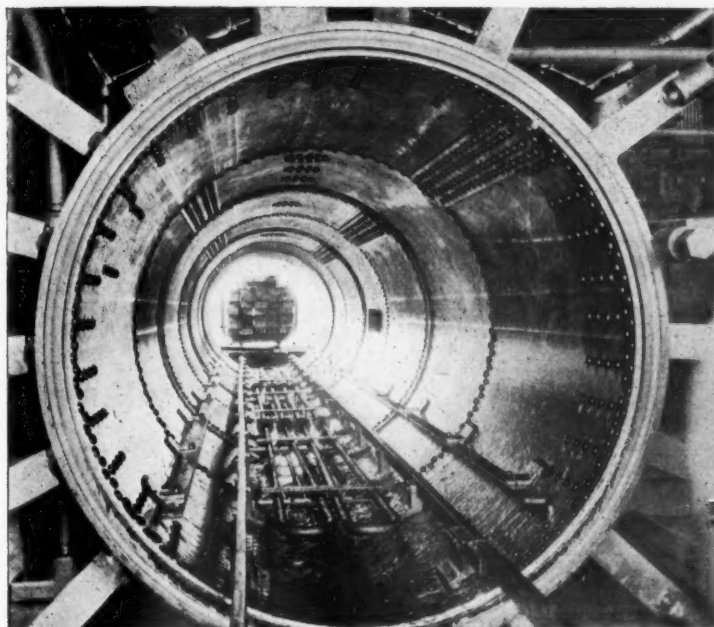
The *St. David* has been certified to accommodate 1,300 passengers, and the cargo capacity is approximately 58,000 cu. ft.

**COPPER TUBES (HEAVY GAUGE) FOR GENERAL PURPOSES.**—A revision (B.S. No. 61, Part 1: 1947) of that part of B.S. 61: 1913 concerning copper tubes has been published (the threading details are published separately as B.S. 61, Part 2). Copies of the specification may be obtained from the British Standards Institution, Sales Department, 24, Victoria Street, London, S.W.1, price 2s. post free.



## Creosoting Sleepers for Tropical Railways

*A successful plant established at Zungeru on the Nigerian Railway*



*Pressure cylinder at Zungeru, Nigerian Railway, about to be loaded.  
The capacity of the plant is about 750 sleepers a day*

THE increased use of wooden sleepers on tropical railways made from locally-grown timbers, has been retarded by the problem of preventing the ravages of the termite. Difficulties of shipping and production during the war made it impossible to obtain replacement metal sleepers at the rate they were wanted, and it became necessary to use wooden sleepers cut locally, although these are known to have only about seven years of service life under tropical conditions, due to the havoc caused by white ants (termites) and dry rot, compared with a steel sleeper's life of 30 to 35 years.

Early in 1943 it was decided to carry out tests to make wooden sleepers impervious to these pests. These were first made in the research department of the Southern Railway in England. In addition, information on tropical woods in railway systems was supplied by the Sudan Railway. After nearly three years of trial, it was decided to erect a plant at Zungeru on the Nigerian Railway to treat hardwoods from the Southern Provinces. The tests had shown the woods from North and East Nigeria to be unsuitable. The plant is now fully at work. Timber in ready-cut lengths is supplied to this

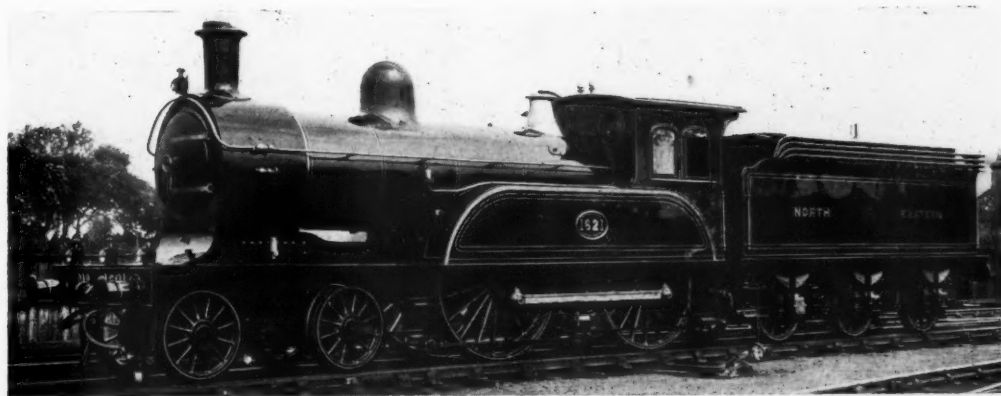
Sleeper Treatment Depot at Zungeru where they are sorted out into their different species. First they are passed on to the aizing and boring machine, which can turn out over 900 sleepers a day. Here the seat for the flat-bottom steel rail is cut; the sleeper is stamped with a code letter; and the spike holes for spiking the rail down to the wood are bored automatically.

The timber is then impregnated thoroughly with hot creosote under pressure. Six trolley-loads, over 250 sleepers at a time, are wheeled into long cylinders which are then hermetically sealed. The air is sucked out, thus creating a vacuum, and creosote at a temperature above boiling point is forced into the cylinders. The removal of the air from the wood cells of the sleepers makes easier the work of the pumps in forcing the creosote into the wood. From there they are loaded on to waiting trucks and are taken to a 160-mile section of the railway where relaying is in progress.

To bring the depot into full operation in September, 1945, the construction had to be done in record time, using mainly local materials. The generator which provides the electricity for driving the machinery, for example, was driven at first by an old adapted steam engine. Men had to be trained to operate and maintain the machines. Nevertheless, the plant was complete and in operation by September, and by November 30 a rate of over 2,000 sleepers in 10 hours had been achieved. Normally, its capacity is 750 sleepers a day. The plant covers an area of a quarter of a mile by a hundred yards, including the intake and despatch yard.

A treated wooden sleeper costs about 17s. It is hoped to pay for the plant, estimated to be worth £20,000, out of the saving in cost. The sleepers will have to be in use for ten years before their resistance qualities can be assessed fully, and before the full hopes of the authorities can materialise. The attention of the tropical railway world is now directed towards this stretch of line on the Nigerian Railway, for, if the full results are a success, a new railway industry for these Colonies will be assured. Meanwhile, it is certain that a substantial increase in the life of wooden sleepers has been attained and their practicable use in tropical conditions has been established.

## "Race to Aberdeen" Locomotive for York Railway Museum

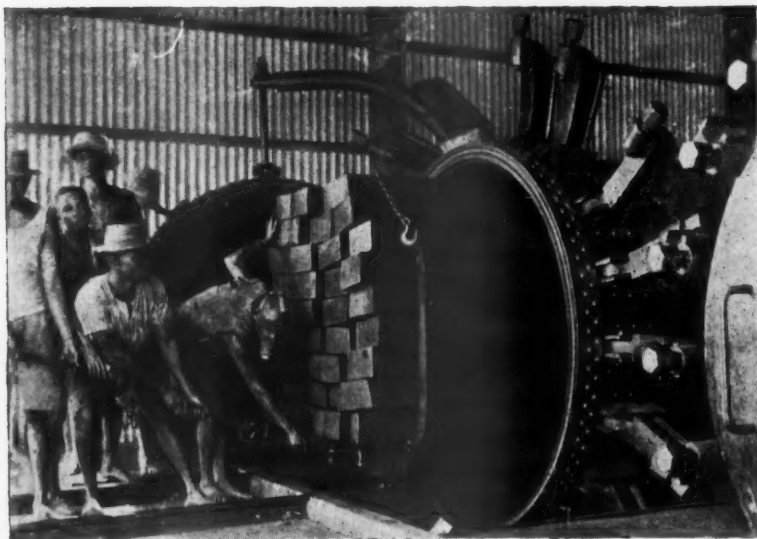


*The former North Eastern Railway 4-4-0 locomotive No. 1621, which participated in the record run in the "Race to Aberdeen" of 1895, restored to its original livery for exhibition at the York Railway Museum (see our September 12 issue)*

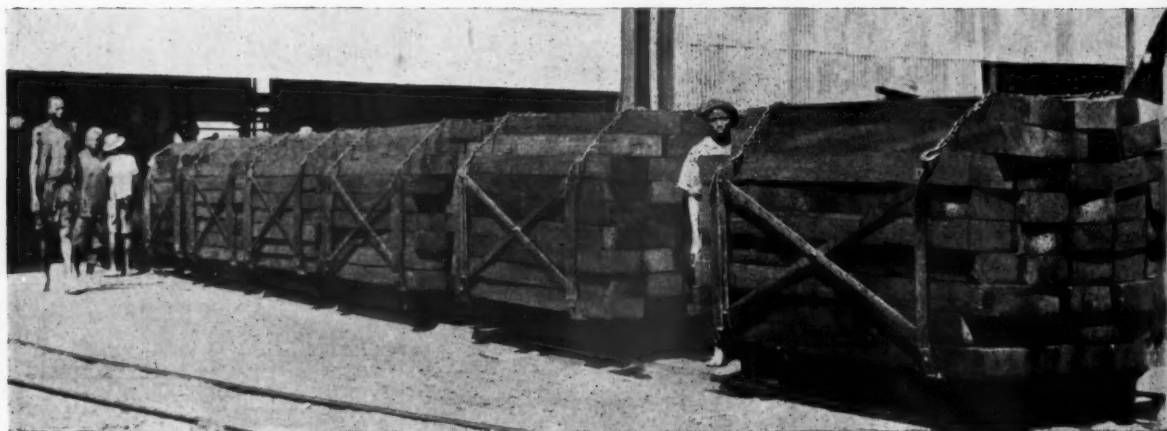
### Creosoting Sleepers for Tropical Railways



*The yard at Zungeru, Nigerian Railway, which can store 72,000 sleepers, and has a despatch capacity of about 50,000*

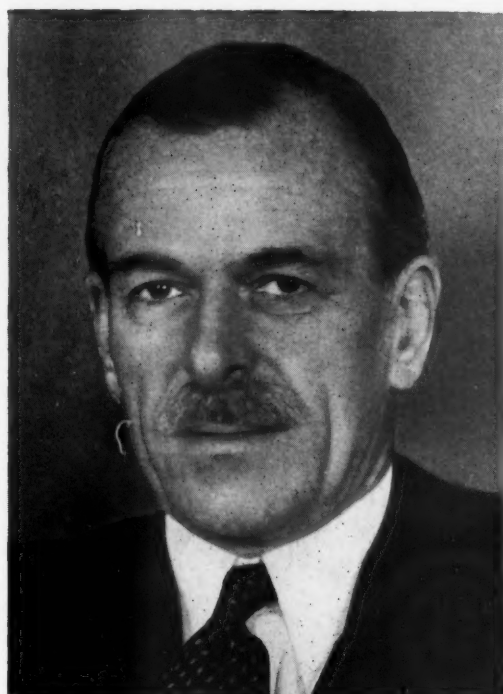


*Sleepers being withdrawn from a creosoting cylinder after treatment*



*One full cylinder-load of six trolleys, each carrying 42 sleepers*

## Members of Railway Executive



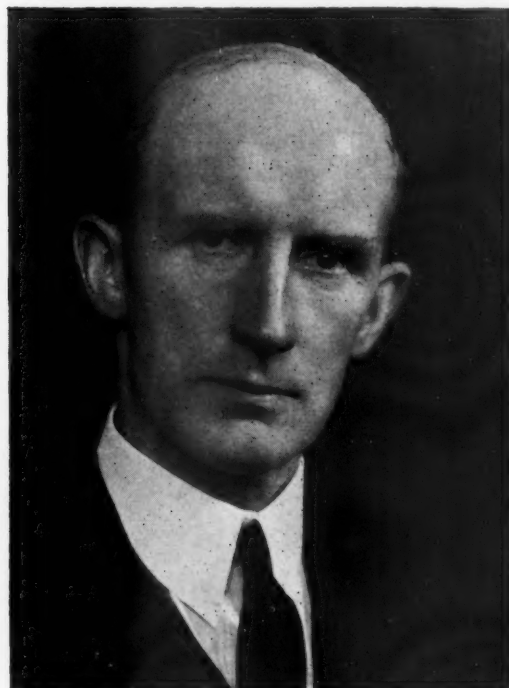
*Mr. R. A. Riddles*

Appointed Member, Railway Executive,  
under the British Transport Commission



*Mr. David Blee*

Appointed Member, Railway Executive,  
under the British Transport Commission



Photo]

[Lafayette

*Mr. J. C. L. Train*

Appointed Member, Railway Executive,  
under the British Transport Commission



Photo]

[Bassano

*Mr. V. M. Barrington-Ward*

Appointed Member, Railway Executive,  
under the British Transport Commission



## Members of Railway Executive

*Mr. W. P. Allen*

Appointed Member, Railway Executive,  
under the British Transport Commission

*General Sir William Slim*

Appointed Member, Railway Executive,  
under the British Transport Commission



Elliott

*Mr. C. Neville*

Appointed Member, Railway Executive,  
under the British Transport Commission

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Elliott

*Captain Sir Ian Bolton*

Appointed a part-time Member  
of the British Transport Commission

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# RAILWAY NEWS SECTION

## PERSONAL

### BRITISH TRANSPORT COMMISSION

The Minister of Transport announces that Captain Sir Ian Bolton has accepted his invitation to become a member on a part-time basis of the British Transport Commission.

The British Transport Commission has appointed, to be its Comptroller, Mr. R. H. Wilson, of Messrs. Brown, Fleming & Murray, chartered accountants, from which firm he retires, by mutual consent, on September 30. The Comptroller will have complete responsibility to the Commission for its financial affairs. Mr. Wilson, who is 42, is a Scottish chartered accountant. He is also a member of the Royal Commission on the Press, Vice-Chairman of the Hemel Hempstead Development Corporation, and Chairman of the New Towns Finance Committee, and Consultant to the North German Iron & Steel Control.

### RAILWAY AND LONDON TRANSPORT EXECUTIVES

The Minister of Transport has announced that the following have accepted his invitation to become members of the Railway Executive and the London Transport Executive which will be set up under the Transport Act, 1947, at an early date:—

#### RAILWAY EXECUTIVE

##### Chairman:

Sir Eustace Missenden (General Manager, Southern Railway) (as already announced).

##### Members (Full-Time)

General Sir William Joseph Slim (Commandant, Imperial Defence College).

Mr. W. P. Allen (General Secretary, Associated Society of Locomotive Engineers & Firemen).

Mr. V. M. Barrington-Ward (Divisional General Manager, Southern Area, L.N.E.R.).

Mr. D. Blee (Chief Goods Manager, G.W.R.).

Mr. R. A. Riddles (Vice-President, L.M.S.R.).

Mr. J. C. L. Train (Chief Engineer, L.N.E.R.).

##### Member (Part-Time):

Mr. C. Neville (Chairman, Economics Committee, National Farmers' Union).

### LONDON TRANSPORT EXECUTIVE

##### Chairman:

Lord Latham (Member, L.P.T.B.) (as already announced).

##### Members (Full-Time):

Mr. John Cliff (Member, L.P.T.B.).

Mr. A. H. Grainger (Solicitor, L.P.T.B.).

Mr. L. C. Hawkins (Comptroller, L.P.T.B.).

Mr. A. B. B. Valentine (Operating Manager (Railways) and Chief Commercial Officer, L.P.T.B.).

##### Members (Part-Time):

Sir Richard Burbidge (Chairman & Managing Director, Harrods Limited).

Sir Edward Hardy (Member, L.P.T.B.).

Mr. T. E. Williams (Director, Co-operative Wholesale Society).

It is reported from New Delhi that Colonel R. B. Emerson has resigned from the position of Chief Commissioner of Railways, India, because of differences with the new Dominion of India Government.

Mr. R. A. Riddles, C.B.E., M.I.Mech.E., M.I.Loco.E., a Vice-President of the London Midland & Scottish Railway, who has been appointed a full-time member of the Railway Executive under the British Transport Commission, joined the L.N.W.R. as a premium apprentice at Crewe Locomotive Works in 1909. After serving with the Royal Engineers from 1914 to 1919, he held technical appointments with the L.N.W.R. and L.M.S.R. at Crewe and Derby, before being appointed Locomotive Assistant to the Chief Mechanical Engineer (1933), Principal Assistant to the Chief Mechanical Engineer (1935), Mechanical & Electrical Engineer (Scotland) (1937), Chief Stores Superintendent (1943), and a Vice-President (1946). Mr. Riddles' services were lent during the recent war to the Ministry of Supply to create a directorate for the provision of transport equipment (D.T.E.); and he was given also the responsibility for all Royal Engineer equipment. The experimental bridging establishment at Christchurch came under the directorate, which designed and produced the Bailey Bridge and other items of field equipment. The Everall Bridge for railway purposes also was produced by the directorate. It provided internal-combustion engines other than aircraft, road vehicle and submarine; cranes; pipe-lines; road-making machinery; pumps; generators; printing machinery; smoke producers; and all-track tractors. The directorate also was instrumental in supplying piers and pierheads for the "Mulberry harbour"—the prototypes had been completed and tested before Mr. Riddles left the Ministry at the request of the L.M.S.R. in August, 1943. Mr. Riddles was prominently concerned with the design and production of large numbers of standard British-built locomotives provided during the war primarily for service overseas; over 1,000 of the "austerity" 2-8-0 and 2-10-0 types were built. In 1941 he was appointed Deputy Director-General, Royal Engineer Equipment, and had a special mission dealing with supplies to Russia, and visited America to ensure that essential stores were sent to Persia.

Mr. David Blee, M.Inst.T., Chief Goods Manager, Great Western Railway, who has been appointed a full-time member of the Railway Executive under the British Transport Commission, joined the G.W.R. in 1916. After a break of two years with H.M. Forces, he gained valuable experience of all phases of the administrative work of the Goods Department as secretary successively to the Rates Manager (the late Mr. F. B. Mortimore) and to two former Chief Goods Managers (the late Mr. E. Ford and Mr. A. Maynard). He gained academic distinctions at the London School of Economics in Railway Law, Railway Commercial & Operating Economics and in Railway Statistics. He has occupied successive posts as Goods Agent, Slough; Chief Clerk, Exeter District; Assistant London District Goods Manager; and District Goods Manager in turn of the Shrewsbury, Liverpool and Birmingham & South Staffordshire Districts. He was a lecturer in Railway Salesmanship and an active member of the G.W.R. London and Birmingham Debating Societies. Mr. Blee has been a member of the Shrewsbury, Liverpool and Birmingham Chambers of Commerce; Liverpool,

Manchester and Birmingham & South Staffordshire Inter-Railway Conferences; Liverpool Port Emergency Committee; Dee Catchment Board; Midland Regional Canal Conference; West Midland Regional Road-Rail Conference; Employers' Panel, Ministry of Labour; and Railway Liaison Officer to various Government departments. He was appointed Assistant to Chief Goods Manager, G.W.R., in October, 1942, with special duties which included a re-organisation of the company's road transport; Principal Assistant to Chief Goods Manager in 1945; and Chief Goods Manager in 1946.

Mr. J. C. L. Train, M.C., M.I.C.E., Chief Engineer of the London & North Eastern Railway, who has been appointed a full-time member of the Railway Executive under the British Transport Commission, entered the Engineer's Office of the North British Railway in Edinburgh as a pupil in 1908. He gained experience both in the office and outside on such works as the Portobello widening, the Thornton-Leven widening, and Arbroath Station reconstruction. In 1912 he accepted a post in London under his former chief, Mr. C. J. Brown, who by that time had become Chief Engineer of the Great Northern Railway. Thereafter, as Assistant Resident, and then Resident Engineer, he had charge of the construction of the Tickhill Light Railway, the Kirkstead & Little Steeping Railway, the Hertford & Stevenage Railway, and the goods-way, Kings Cross. In August, 1914, he enlisted in the Royal Fusiliers and later was given a commission in a field company, R.E. He served on the Ypres, Somme, and other fronts, and, after being wounded in 1916, was given command of the drafting company at the R.E. Depot, Newark-on-Trent. Mr. Train returned to France subsequently and was awarded the M.C. in 1918 while in command of a field company, R.E. He was demobilised in June, 1919, with the rank of Major, and in 1921 he was appointed Personal Assistant to the Chief Engineer, G.N.R. In that capacity he was made responsible by Mr. Brown, among other tasks, for introducing to this country the Hallade track recorder and Hallade method of adjusting curves. Three years later Mr. Train was appointed Assistant Industrial Agent in the Chief General Manager's Office, and was placed in charge of the Works Section of that office in 1925. In 1927 he was appointed Assistant to the Chief General Manager (Works), and two years later he was transferred to Glasgow as District Engineer, Western Section, Southern Scottish Area. In 1934 he became Assistant Engineer (Maintenance), Southern Area, and, in 1937, Assistant Engineer, Southern Area. He became Engineer, Scottish Area, in 1938, Engineer, Southern Area, in 1941, and Chief Engineer of the whole system in 1942.

Mr. Victor Michael Barrington-Ward, C.B.E., D.S.O., M.Inst.T., Divisional General Manager, Southern Area, London & North Eastern Railway, who has been appointed a full-time member of the Railway Executive under the British Transport Commission, was educated at Westminster and at Edinburgh University, where he took his engineering degree. He joined the Midland Railway in 1907, and had experience both of construction and maintenance. During that period he was awarded

the Miller Prize of the Institution of Civil Engineers. Subsequently he was transferred to the Operating Department, where he received training in all its branches. In 1914 he was appointed Assistant to the Passenger Train Superintendent, in which capacity he assisted personally the then General Superintendent, Sir Cecil Paget, in connection with various problems. At the outbreak of war in 1914, he volunteered, as an ex-Territorial officer, and joined the 11th (Pioneer) Service Battalion, South Lancashire Regiment, in which he held the rank of Captain; but he was transferred, as Major on the headquarters staff, to the Railway Operating Division on its formation in 1915. Mr. Barrington-Ward subsequently became Lt.-Colonel, and commanded a large group of operating companies; he was awarded the Distinguished Service Order for gallantry, was mentioned in dispatches four times, received the French Croix de Guerre with palm, was cited in French Army Orders, and finally was awarded a Brevet Lt.-Colonelcy. In March, 1919, he joined the personal staff of Sir Eric Geddes, at the request of the latter; and, on the formation of the Ministry of Transport, he was appointed Director in Charge of the Railway Operating Section, on loan from the Midland Railway. In 1922 he joined the General Manager's staff of the North Eastern Railway, and in January, 1923, became District Superintendent, Middlesbrough. In 1927, he was appointed Superintendent, Western Section, Southern Area, of the L.N.E.R., becoming Superintendent of the whole of the Southern Area in 1939. Mr. Barrington-Ward was appointed Assistant General Manager (Operating) in 1942, with control of the company's Central Traffic Office and co-ordination of inter-area operating arrangements. From 1938 to 1945 he was Chairman of the Railway Executive Committee Operating Committee. He was appointed Divisional General Manager, Southern Area, L.N.E.R., in 1945. Mr. Barrington-Ward was largely instrumental in organising and raising the Transportation troops of Royal Engineers, Supplementary Reserve, and was Lt.-Colonel commanding the Operating Group, Royal Engineers (S.R.), from 1924 to 1928. In 1938 he was awarded the Operating Gold Medal of the Institute of Transport for a paper on "Railway Operation," read before that Institute, of which he is now a Vice-President.

Mr. W. P. Allen, C.B.E., General Secretary of the Associated Society of Locomotive Engineers & Firemen, who has been appointed a full-time member of the Railway Executive under the British Transport Commission, was born in 1888. He joined the Great Northern Railway in 1907, as an engine cleaner at the Hornsey depot, was promoted fireman in 1913, and became a driver in 1924. He joined the A.S.L.E.F. in 1912, and was Assistant Secretary of the Hornsey branch from 1913 to 1921, and Secretary from 1921 to 1927. He was a member of the executive committee from 1927 to 1933, and President for the years 1930, 1932, and 1933. In 1933 he was elected Organising Secretary, and he became Assistant General Secretary in 1936, and General Secretary on January 1, 1940. Mr. Allen was a member of the National Wages Board from 1929 to 1933. He was made a C.B.E. in the New Year Honours this year.

General Sir William Joseph Slim, G.B.E., K.C.B., D.S.O., M.C., who has been appointed a full-time member of the Rail-

way Executive under the British Transport Commission, has been Commandant of the Imperial Defence College since 1946. He was born in 1891, and was educated at King Edward's School, Birmingham. He saw service in the 1914-18 war in Gallipoli, France, and Mesopotamia, and was wounded twice; and he held high commands in the recent war, culminating with his appointment as Commander-in-Chief of the Allied Land Forces, South East Asia.

Mr. C. Nevile, who has been appointed a part-time member of the Railway Executive under the British Transport Commission, is a member of the Agricultural Improvement Council and Chairman of the Economics Committee of the National Farmers' Union, of which he is a Past-President.

Captain Sir Ian Bolton, Bt., O.B.E., who has been appointed a member on a part-time basis of the British Transport Commission, was born in 1889, and was educated at Eton. He saw active service from 1914 to 1919. Sir Ian Bolton is a Deputy-Lieutenant for Stirlingshire; a member of McClelland, Ker & Company, chartered accountants, of Glasgow and London; and a Director of the Scottish Widows' Fund & Life Assurance Society, London Midland & Scottish Railway Company, Scottish American Investment Co. Ltd., Coltness Iron Co. Ltd., and Smith & Wellstood Limited.

#### RAILWAY EXECUTIVE COMMITTEE

On his appointment as a member of the British Transport Commission, Sir William V. Wood has resigned his membership of the Railway Executive Committee, an appointment he has held since the formation of the R.E.C. in 1938. The Minister of Transport has appointed Mr. G. L. Darbyshire, who has been made Acting President of the London Midland & Scottish Railway Company, in succession to Sir William Wood, to be a member of the R.E.C.

The Executive Committee of the National Union of Railwaymen has appointed Mr. J. B. Figgins, Assistant General Secretary since 1943, to be acting General Secretary, in place of Mr. J. Benstead, now a member of the British Transport Commission. Mr. J. Campbell is to be acting Assistant General Secretary, and Mr. M. Pounder, Acting Assistant to the General Secretary.

We regret to record the death on September 9 of Mr. Duncan McMillan, M.I.C.E., late Chief Engineer, Ceylon Government Railway.

Mr. C. K. F. Hague, Managing Director of Babcock & Wilcox Limited, has been appointed a member of the Council of Industrial Design.

#### PRESENTATION TO MAJOR MALCOLM SPEIR

To mark his retirement from the position of Chief Officer for Scotland, L.M.S.R., Major Malcolm S. Speir, on September 10, was presented by the Divisional Officers of the L.M.S.R. in Scotland with an antique solid silver sugar-sifter and mustard-pot and spoon. Mr. T. H. Moffat, his successor as Chief Officer, made the presentation, and referred to the faithful service rendered to transport by Major Speir in Great Britain for 42 years. Major Speir also was presented with a silver salver and silver cigar-box from the other Scottish officers of the

company, and two antique silver salt cellars and spoons from his office staff.

Mr. M. F. Berry, who recently was elected a Director of Rhodesia Railways Trust Limited, and Mr. R. Annan have been elected Directors of the British South Africa Company.

It is notified in *The London Gazette*, under the heading of Regular Army: Royal Engineers, that Captain (War Substantive Major) I. L. Roney-Dougal has been promoted Major.

Mr. W. G. W. Reid, General Manager of the Madras & Southern Mahratta Railway, has proceeded on leave until October 4, and Khan Bahadur J. D. Bhote is acting as General Manager.

We regret to record the death on September 6, at the age of 70, of Mr. John Hollis, who was for 44 years representative for Scotland for Thos. Firth & John Brown Limited.

Mr. W. R. Eadie, M.S.M.A., formerly Assistant Secretary of the Manchester Regional Office of the Federation of British Industries, has been appointed Secretary of the South-Western Region of the F.B.I. at Bristol.

Memorial services to Sir Harold Kenward, a Director of the Dunlop Rubber Co. Ltd., will be held on September 22; in London the service will be at Holy Trinity Church, behind the Oratory in Brompton Road, S.W., and in Birmingham at St. Philip Cathedral Church, Colmore Row. Both services begin at noon.

**INSTITUTION OF MECHANICAL ENGINEERS.**—Among the arrangements which have been made by the Institution of Mechanical Engineers for the Autumn session, are the President's address and general meeting which will take place on Friday, October 24, while on Friday, November 7, there will be a discussion on the measurement of the temperature of sliding surfaces with particular reference to railway brake blocks, introduced by Mr. R. C. Parker, Ph.D., B.Sc., and Mr. P. R. Marshall, Ph.D., B.Sc. On Friday, November 14, there will be applied mechanics group papers on differential analysers by Mr. H. E. Rose, Ph.D., M.Sc.(Eng.), A.M.I. Mech.E., who will deal with the mechanical differential analyser, and applications, and by Mr. S. C. Redshaw, Ph.D., M.Sc., whose subject will be an electrical potential analyser.

**AWARDS TO L.N.E.R. AMBULANCE MEN.**—The staff of the L.N.E.R. North Eastern Area Centre of the St. John Ambulance Association is preparing to distribute medals and bars to L.N.E.R. servants who have won them, but who, owing to the restriction in the use of precious metal, up to now have been given certificates only. Staff who have passed 15 examinations are eligible for a gold medal, and if they continue to pass examinations, they receive a bar for every succeeding five years. As the gold position is not likely to improve, it has been decided to issue silver-gilt medals and bars, and in a few months' time these will be available for the staff who have become entitled to them. During the period 1941 to 1947 inclusive, the North Eastern Area staff has gained the following awards: 488 medals; 176 20-year bars; 77 25-year bars; 33 30-year bars; 16 35-year bars, and 10 40-year bars.



## Caledonian Railway Centenary Luncheon

*Minister of Transport's tribute to L.M.S.R. efficiency*

On September 10, a luncheon was held at the Central Hotel, Glasgow, to commemorate the centenary of the Caledonian Railway. Sir Robert Greig, Chairman of the Scottish Committee of the L.M.S.R., presided, and Mr. Alfred Barnes, the Minister of Transport, was the principal guest. Among those supporting the Chairman were:—

The Lord Provost, Sir Samuel Beale, Sir Ian Bolton, Sir Robert Bruce, Mr. T. F. Cameron, Colonel the Hon. I. M. Campbell, Lt.-General Sir A. F. Philip Christison, Sir John Craig, Lord Hamilton of Dalzell, Mr. G. L. Darbyshire, Mr. J. M. Davidson, Sir Patrick Dollan, Viscount Massereene and Ferrard, Sir Edmund Findlay, Sir Ralph Glyn, M.P., Mr. James Gourley, Lord Inverclyde, Colonel Kennedy, Mr. W. H. Marr, Mr. T. H. Moffat, Mr. A. K. McCosh, Colonel Brinie Reid, Mr. H. S. Sharp, Sir Murray Stephen, and Sir William Thomson.

Sir Robert Greig, after reading a letter

and also proposed the toast of the London Midland & Scottish Railway, said that he did not know of any railway with better conditions, a higher standard of efficiency, and a greater concentration over its mileage than the L.M.S.R. Every person who had been associated with the building of that magnificent enterprise in British engineering construction and British administration, could claim legitimate pride.

### SEVEN YEARS OF STRAIN

The Minister went on to speak of the strain which British railways had had to endure during the past seven years, and said he was convinced that it was one of the problems that the man in the street could not, or would not, appreciate. It was essential that the British railways should be safeguarded in their future development so that they could continue to play their part in our national economy. The railways were bound to be always the

to its maximum; and 10 per cent. more production in textiles would relieve the problem of clothes rationing.

This was a matter entirely in their own hands, and if all sections of the community could be inspired with enthusiasm, determination, and faith to improve production along these lines, the picture would begin to change.

After 100 years of British achievement in railway engineering there was nothing of which to be ashamed. What mattered was that the country's railways should perform the same service to trade and the people as they had done in the past, and he expressed the view that the high standards set by the Caledonian and L.M.S.R. would be maintained in the future.

The Earl of Balfour, Chairman of the Scottish Division of the National Coal Board, who seconded the toast, said he had heard people opposed to nationalisation assert that without the profit motive they would not get the courage and enterprise of the kind so admirably illustrated in the early days of the railways. He felt, however, that a far more important motive where the engineer was concerned, was pride in his profession and efficiency for efficiency's sake. He was certain that enthusiasm would continue into the future.

Sir Ralph Glyn, M.P., replying to the toast, said that uniformity did not necessarily mean efficiency, and that what mattered was that they should retain all those characteristics which had made British railways an example to the world.

Sir Ian Bolton proposed the toast of the guests, to which the Lord Provost, Sir Hector McNeill, J.P., replied.



Guests at the luncheon at the Central Hotel, Glasgow, including Sir Patrick Dollan, Director, British European Airways Corporation; Sir Ian Bolton, Director, L.M.S.R.; Sir Robert Greig, Chairman, Scottish Committee, L.M.S.R.; Mr. Alfred Barnes, Minister of Transport; Sir Hector McNeill, Lord Provost of Glasgow; and Mr. G. L. Darbyshire, Vice-President, L.M.S.R.

## New Passenger Stock for Southern Railway

*(Concluded from page 320)*

trolled by an automatic cut in and out switch operating at 5/10 lb. per sq. in. pressure, is carried on the underframe of the vehicle, and the arrangement permits the delivery of water to all points required in the kitchen and pantry and the staff lavatory.

With the object of obtaining maximum cleanliness, the floors of the kitchen and pantry are covered with stone-colour tiles and the walls and ceiling are covered with cream Holoplast panelling. Stainless-steel mouldings have been used for the corners.

Fresh-air pressure ventilation has been provided at floor level and then extracted at the roof by means of five 12-in. electrically-driven extractor fans, one of which is situated immediately over the cooking range to deal with fumes that collect under the hood. To meet the desires of the kitchen and pantry staff, a feature of the new car is the provision of a compartment for its use, together with lavatory accommodation, as elsewhere.

The underframes and bogies are Southern Railway standard design. A departure, however, has been made in respect of the foundation brake rigging by the use of one Westinghouse Brake & Signal Co. Ltd. Prestall vacuum brake lever cylinder of 30 in. diameter. The use of one cylinder instead of two 22-in. diameter cylinders, as previously used, with brake shafts, has effected a considerable reduction in weight, and is expected to result in less maintenance.

The exteriors of the coaches have been painted in the latest Southern Railway standard green, without lining and with shaded gold and black letters and numbers.

from Sir Robert Burrows, Chairman of the London Midland & Scottish Railway Company, apologising for his unavoidable absence, proposed the toast of the Minister of Transport, and said that the Minister need have little fear that on the railways he would find the kind of sabotage which had enabled a certain section of the people to stab the nation in the back at the time of its greatest need. The railwayman would always remember that he had been, and in the future would be still more, a servant of the public.

He suggested that one method of retaining the enthusiasm of railwaymen would be to give them, and those who directed them, a measure of responsibility in the management of the railways by decentralisation as far as was possible. In that way enthusiasm and efficiency would be maintained. In a few months they would lose all they had, including their identity, except perhaps their traditions and their proud memories.

The Minister of Transport, who replied

most vital element in the country's transport system. The country could not afford to let the British railway system run down, but he could not recall a time in its history when it was facing such a difficult position as it was at present, with vast arrears in maintenance and replacements to be overtaken.

There were just over 1,000,000 effective wagons to handle the entire trade of the country. Of that number, 450,000 wagons must be earmarked this winter for the transport of coal to meet the needs of industry, leaving 550,000 wagons to carry the country's whole domestic trade. The output of new wagons this year was estimated at only between 30,000 and 40,000.

On an average, it took ten days for the turn-round of one wagon. If we could save one day on the turn-round of our wagons we should automatically add 100,000 to the present total.

Similarly, 10 per cent. more coal would help to increase our export trade; 10 per cent. more steel would revive engineering

## Ministry of Transport Accident Report

Near Hallen Marsh Junction, G.W.R., February 18, 1947

Brigadier C. A. Langley inquired into the accident which occurred at about 5.30 a.m. on February 18, 1947, near Hallen Marsh Junction, G.W.R., when the 9.20 p.m. freight train, Avonmouth to Salisbury, comprising 44 wagons (one empty) and brake van drawn by a 4-6-0 engine of 6800 class, was diverted accidentally over the Pilning single line and collided violently, head-on, at a combined speed of approximately 37 m.p.h., with the 8.45 p.m. special freight train from Cardiff to Avonmouth.

The latter train, made up of 48 empty wagons and brake van, drawn by a 4-4-0 engine of the 9000 class, was running tender first. It had been accepted under the warning arrangement and was in possession of the electric train-staff for the Pilning Low Level-Hallen Marsh section.

for the branch—contrary to his practice of keeping them standing for the main line.

At 4.37 a.m. the special freight train involved in the collision was accepted, and at 5.10 a.m., entering section, was received. At 5.18 a.m. the Avonmouth-Salisbury train was offered from Holesworth Junction. "Line clear" was obtained from Henbury for it and then given to Holesworth Junction, "entering section" being received immediately afterwards. The signalman thereupon pulled off advanced starting signal 63 and attempted to clear starting signal 64, but of course could not do so as 14 points were lying for the branch.

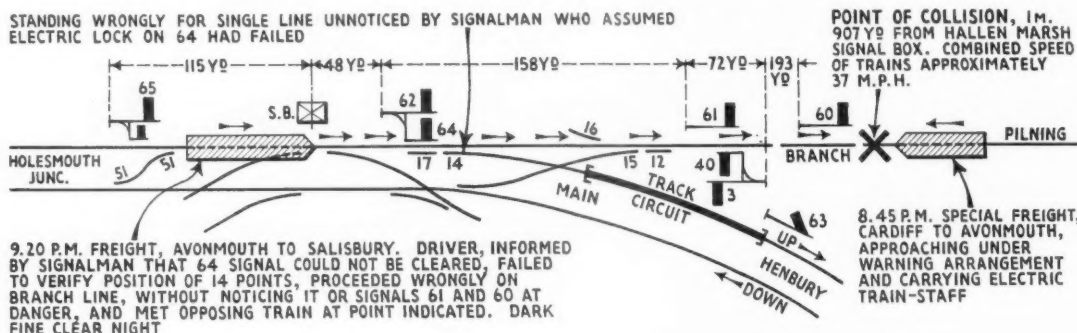
He failed to realise this, although he stated that he glanced along the frame to check the position of the levers. He made several attempts to pull 64 lever by press-

anything else until a moment before the collision, when he saw the light of the opposing train. It was too late to take action, and the collision took place with regulator open and brakes off. He estimated his speed at 25 m.p.h.

The fireman generally confirmed this evidence, but did not see signal 63 or any of the branch-line signals as he started firing in readiness for the Henbury bank. Looking out for the distant signal for Blaise box, which is between the junction and Henbury, he saw the headlight of what he took to be a train on the down main line and resumed firing. The collision buried him under a pile of coal.

The guard could throw no light on the accident as he was working on his papers.

The driver of the opposing train received the train-staff and the warning from the signalman at Pilning and travelled slowly, until he noticed headlights approaching, and closed the regulator. Before he could apply brakes or whistle, the trains collided, throwing him off his engine, fortunately



Details showing the circumstances attending the accident near Hallen Marsh Junction

Both engines and tenders were derailed and damaged; 26 wagons were derailed and a number completely smashed. All six members of the train crews were injured and five were conveyed to hospital, but were discharged the same day. Some were not fit for duty for over a month. Assistance was forthcoming promptly, but work of clearing the wreckage was hampered by severe weather and complicated by danger of fire from loaded petrol-tank wagons. The night was very dark, fine, and clear, with severe frost and 3 in. of snow.

The accompanying diagram shows the lines, signals, and other details essential to an understanding of the circumstances of the accident.

### THE COURSE OF EVENTS

At 3.3 a.m. the signalman accepted from Pilning, under the warning arrangement, the 1.15 a.m. freight train, Cardiff to Avonmouth, which arrived at his home signal at 3.41 a.m., and was held while an engine passed through the junction. He then set the road through 16, 14, and 51 points, a route which brings a train past the signal box and is convenient when collecting the train-staff and giving instructions to the crew. (The other possible route is through 15 points.)

Normally, this train is shunted here, and it has been the usual practice to accept it on the up line past the box, but as the driver shouted that he had no wagons to put off, the signalman replied, "Right away to Royal Edward" (Avonmouth). He put the signals to "danger" and 51 crossover normal, but failed to replace 16 and left 14 points normal—set

ing the electric lock circuit plunger, and as the track indicator showed "clear" concluded the lock had failed, and decided to authorise the driver to pass the signal at "danger." He returned 63 to "danger," pulled off 65 when the train had nearly stopped at it, and when the engine reached the box told the driver that 64 had failed and that he had authority to pass it. He again lowered 63, showed a green hand signal, watched the train pass, and started entering details in his train register. Whilst so engaged he looked up and noticed the train had taken the branch line and passed signals 61 and 60 at danger, so he telephoned the position to Pilning and Avonmouth Control. While telephoning he heard the collision and informed Control of the fact.

The driver of the Salisbury train said he proceeded slowly to the box when signal 65 came "off," where he was told 64 had failed. He got the green hand signal and observed that 63, the advanced starting signal on the main line, which he was due to follow, was off.

His movement past No. 64 should have been governed by Rule 81(1), G.W.R. amendment, which lays down the manner in which the warning is to be given to a driver in the absence of a handsignalman, and says: "In either case the driver, before passing over any facing points or switch diamonds, must satisfy himself that they are in the right position for his train."

The driver admitted that he did not carry out the rule nor instruct his fireman to do so. Having seen signal 63 "off," he took it for granted that he was on the right line, and apparently did not notice

without serious injury. The fireman noticed nothing out of the ordinary until the driver shouted, and was largely responsible for rescuing the injured men on the engines and obtaining further assistance.

### INSPECTING OFFICER'S CONCLUSIONS

Responsibility rests primarily on the signalman, in that he accepted the Salisbury train under full "line clear" with the facing points incorrectly set, and instructed the driver to pass the starting signal with them in that position. Brigadier Langley could find no satisfactory reason to account for this lapse on the part of a young man of 22, intelligent and keen on his work. A signalman for 3½ years, he had spent six months at this signal box. Traffic is not heavy, and the trains concerned were running on normal schedules. Admittedly, the night was very cold and he had been on duty over seven hours, but there was a good stove and the box was well lit.

No criticism arises out of the acceptance of the 1.15 a.m. Cardiff-Avonmouth train through 14, 16, and 51 points, quite a normal movement and convenient for passing messages; but failure to reset 14 points led to a chain of mistakes. The signalman's practice, he told Brigadier Langley, was to reset the road for the main line after a branch train, and he thought he had done so. The unexpected inability to pull 64 lever at a moment when he knew the train would be arriving shortly must have confused and unsettled him, so much so that he did not check the position of his point levers and jumped to the conclusion that the electrical lock had failed.

Probably a more experienced man would have discovered his mistake.

The driver of the Salisbury train must share the responsibility. After being instructed to pass the starting signal at "danger," he failed to notice the setting of the facing points, and, after observing signal 63 "off," failed to keep an adequate look-out and did not notice he was on the branch, where he passed two signals at danger. He appears to have taken no more notice where he was going until the accident. He may have been misled by signal 63, but had he been keeping a proper look-out should have noticed very quickly that he was proceeding away from and not towards it. Standing on the right he had no difficulty in observing this, although he would have had to cross the cab to see the branch-line signals. He is 51½ years of age, with 35 years' service, as driver for 13 years. He has a clear record.

It is unfortunate that the fireman did not look out after leaving Hallen Marsh box or he scarcely could have missed signals 61 and 60. Without neglecting firing duties, it would have been prudent, Brigadier Langley considers, to keep a look-out until the junction had been cleared, especially as he had heard that the starting signal was defective.

The guard cannot be blamed. He was not expecting to stop at Hallen Marsh, and, in fact, the stop was so short that apparently he did not notice it. The other train-crew could do little to avert the collision.

#### REMARKS

No recommendations are made. The accident was caused through dual failure of the human element, and there is no justification in the particular circumstances for the provision of additional safety equipment. It required successive mistakes by two men in different positions to cause the accident. Had the driver worked in accordance with the rules, he would have examined the facing points and noticed the signalman's mistake immediately. Even after failing to do so, he would have had time to prevent the collision had he kept a proper look-out and noticed that he was on the wrong line.

The need for a signalman to take particular care before jumping to conclusions that equipment has failed is emphasised.

Had the signalman had more confidence in the integrity of the apparatus in his box he would have checked his lever frame before assuming that the electrical lock had failed. Hasty judgment on the part of a young signalman, coupled with the carelessness of an experienced driver, brought about an accident preventable had either exercised ordinary attention.

## Notes and News

**Mechanical Engineers for Brazil.**—A British-owned railway in Brazil requires two mechanical (locomotive) engineers. See Official Notices, page 335.

**Metrovick Lamp Contract.**—The G.W.R. has placed a part-contract with the Metropolitan-Vickers Electrical Co. Ltd., for the supply of Cosmos and Metrovick electric lamps for a period of twelve months ending August 31 next.

**Co-operative Wholesale Society Transport Vacancy.**—The Co-operative Wholesale Society Limited is seeking an Assistant to the Manager of its Head Office Department, Manchester, which deals with the routing and transport of grocery commodities and dry goods. See Official Notices, page 335.

**London Transport Lifts at Kings Cross.**—Two lifts at the old Piccadilly Line Station at Kings Cross were brought into operation on September 15, working in the up direction, to assist in the speedier movement of passengers from the Piccadilly Line to the surface. They are operated in the morning and evening rush hours from Mondays to Fridays, and from 11.30 a.m. to 2 p.m. on Saturdays.

**Ransome & Marles.**—After providing £85,779 for depreciation and £203,500 for tax, the net profit of the Ransome & Marles Bearing Co. Ltd. for the year to June 30 last, including accumulated overseas profits and surplus reserves for taxation for the previous year, amounted to £205,959, as compared with £127,871, including £25,353 E.P.T. recovery, in the previous twelve months. A final dividend of 12½ per cent., plus a special bonus of 5 per cent. from overseas profits, increases the distribution from 20 to 25 per cent.

**Assistant Locomotive Superintendent for North Borneo Government Railway.**—The North Borneo Government Railway Department is seeking an assistant locomotive superintendent. Candidates must have served an apprenticeship in a railway locomotive department, and have had experience in running a department, and in the drawing office. See Official Notices, page 335.

#### G.W.R. Winter Restaurant Car Services.

—The G.W.R. will have 61 restaurant and buffet cars on weekdays, and 13 on Sundays in the winter service which comes into operation on Monday, October 6. These will cover all the main-line routes. The menus on the cars will be similar to those in operation at the moment, with the exception that there will be cuts in meat, cheese, bacon, and points goods, which will be replaced by fish and other unrationed foods.

#### Electric Lamps on G.W.R. Locomotive.

—The first G.W.R. locomotive to be equipped with electrically-lit head and tail lamps, instead of oil lamps, has been brought into service. In addition to lighting the engine lamps, the equipment also supplies lighting for the cab; plugs are fitted under the footplate for the attachment of any lamps for inspection purposes. The lamps are controlled in the cab from a switchboard incorporating lights indicating which lamps are switched on. The locomotive is attached to Swindon shed and is undergoing tests before going into regular service.

#### "Battle of Britain" Class Engines.

Three Southern Railway "Battle of Britain" class 4-6-2 mixed-traffic locomotives were named *Winston Churchill*, *Lord Dowding*, and *Fighter Command* at Waterloo on September 11; the ceremonies were performed by Marshal of the Royal Air Force Lord Dowding and Air Marshal Sir James Robb. A further three locomotives of this class were named at Waterloo on September 16, as follow: No. 21C154, named *Lord Beaverbrook* by Lord Beaverbrook; No. 21C165 named *Hurricane* by Sir Frank Spriggs, Managing Director of the Hawker-Siddeley Aircraft Co. Ltd.; and No. 21C166 named *Spitfire* by Sir Hew Kilner, Managing Director of the Aircraft Section of Vickers Armstrongs.

## Southern Railway "Battle of Britain" Class Engines



No. 21C164 named "Fighter Command" at Waterloo Station on September 11. Left to right: Mr. P. J. Noel-Baker, M.P., Secretary of State for Air; Marshal of the Royal Air Force Lord Dowding; Air Marshal Sir James M. Robb; Mr. Henry Brooke, Deputy Chairman, Southern Railway; Mr. John Elliot, Deputy General Manager, Southern Railway; Air Marshal Sir Leslie N. Hollinghurst, and Sir James H. Barnes, Permanent Under-Secretary of State for Air.



Limited. Mr. Henry Brooke, Deputy Chairman, Southern Railway, presided at both naming ceremonies. The new class of forty engines will bear names of personalities, aircraft, R.A.F. stations and squadrons associated with the Battle of Britain, and are similar to the "West Country" class.

**United of Havana Debentures.**—A payment of £11 4s. 3d. per cent. will be made on October 1 on account of arrears of coupons on the bearer debentures of United Railways of the Havana & Regla Warehouses Limited. This payment, made under the terms of arrangement with the stockholders, will pay coupons 62 to 66 in full, and 8s. 3d. on account of coupon No. 67.

**Estimated Saving on Rhodesia Railways Purchase.**—Speaking at Salisbury on September 2, the Prime Minister of Rhodesia, Sir Godfrey Huggins, claimed that the annual saving realised by the recent purchase of the Rhodesia Railways would amount to £353,000 sterling. A loan of £30 million raised in London had been spent in part on buying shares and redeeming debentures. The balance, together with investments at market value, represented total cash resources of £11,243,847.

**Iron and Steel Production.**—Some comparative figures relating to the production of pig iron and steel ingots and castings are given below:—

STEEL INGOTS AND CASTINGS (000's of tons)				
	1947		1946	
	Weekly average	Annual rate	Weekly average	Annual rate
First quarter ...	216	11,231	243	12,617
Second quarter ...	244	12,694	252	13,111
July ...	212	11,007	226	11,759
August ...	234	12,178	226	11,747

PIG IRON				
	Weekly average	Annual rate	Weekly average	Annual rate
First quarter ...	134	6,989	146	7,566
Second quarter ...	142	7,363	151	7,827
July ...	144	7,460	147	7,645
August ...	147	7,660	145	7,558

**Caledonian Railway Centenary Exhibition.**—In connection with the centenary on September 10, 1947, of the opening of the first section of the main line of the Caledonian Railway between Carlisle and Beattock, an exhibition is being held at the Glasgow Art Gallery, Kelvingrove, Glasgow, from September 13 to 29 inclusive. The exhibition includes a collection of models of Caledonian Railway locomotives and rolling stock from 1880 onwards, and pictures and photographs of locomotives from the opening of the line. Models of the Caledonian Steam Packet Company's steamers are on exhibition, together with drawings of engineering works, plans, and maps showing the development of the railway and the layout of early stations. There is also a collection of timetables, posters, and other documents covering the existence of the Caledonian Railway.

**L.M.S.R. Insulated Containers for Frozen Foods.**—Twenty highly-insulated road-rail containers of a new type, first tested experimentally last year, are to be built by the L.M.S.R. for transport of home produced, quick-frozen fruit, vegetables, and meat. Seventeen firms are planning production of these foods, which is expected to reach 10,000 tons this year, with a further 10,000 tons expected to come from the Continent. It is planned to keep the foods in cold storage in London and other large cities for winter distribution. With a load capacity of 3 tons each, and adjustable to either road or rail chassis, the new L.M.S.R. containers will ensure controlled temperature conditions from packing stations and ports to large cold stores.

Insulated with 9-in. thick expanded rubber, they will maintain even temperatures of 0° F. or below, with, at most, a rise of a few degrees in load temperature during transit, regardless of outside conditions.

**Silentbloc Limited.**—Net profit for the year ended May 31 last was £34,251, an increase of £7,729. Provision of £38,108, as compared with £37,833 last year, has been made for current taxation; and £6,660, as against £5,750 in 1945-46, is allocated for future income tax and contingencies. After payment of a proposed final dividend of 7d. on the 2s. ordinary shares there will remain £18,107 to carry forward, as against £17,982 in the preceding year. The ordinary dividend in 1945-46 was 6d. per share.

**Charles Roberts & Co. Ltd.**—The consolidated trading profit for the year ended March 31 last showed an increase of £63,918, at £540,254. The combined net profit after providing for depreciation and taxation is £150,985, as against £95,441 for the previous year. The directors propose a final ordinary dividend of 22½ per cent., making 30 per cent. for the year, and comparing with a preceding ordinary dividend of 20 per cent. An additional distribution of 3½ per cent., not subject to tax, is proposed to be made from accretion of capital arising from the realisation of investments. The company is carrying forward £182,238 to next year's account, as compared with £155,303 brought in.

**G.W.R. to Purchase 1,200 Road Vehicles.**—The G.W.R. plans to purchase 800 motor units and over 400 trailers to replace life-expired vehicles to be withdrawn by the end of 1948. The total cost is expected to be in the region of £700,000, and includes the provision of additional trailers involved in the substitution of articulated vehicles for rigid units. Full advantage has been taken of the opportunity to make available to the user of railway cartage the benefits of progress in vehicle design and construction which manufacturers have achieved since production for civilian use was restricted so severely. Many of these improvements find their origin in wartime necessity, particularly in the heavier types. Capacities provided for range from the 10-cwt. run-about van to the 25-ton tractor.

**Capital Rearrangement of Wagon Business.**—A statement by Mr. Duncan Bailey, Chairman of Charles Roberts & Co. Ltd., which is circulated with the company's report and accounts, foreshadows a rearrangement of the company's capital. The Chairman said that when the company receives Government stock in exchange for 33,000 railway wagons owned by its subsidiaries, which will be taken over by the Transport Commission on January 1, a considerable sum will be entailed representing capital no longer required in the business. The directors might, therefore, decide to reconsider the capital structure of their company so as to bring it more into line with what might be needed to run the main works under the new conditions expected to prevail when the Transport Act comes into force.

**London Transport Plans for Winter.**—London Transport will have installed 400 de-icing machines on tracks all over London by the end of the year. They contain anti-freeze liquid which is spread along the live rail by the collector shoes of passing trains, in order to prevent an ice film forming on the conductor rails. The machines are installed at intervals of one-third to half-a-mile along the tracks. A limited number of these machines, total-

ling about 90, was in use last winter on certain sections of the Bakerloo Line. They eliminated freezing up almost completely where they were used. The whole of the open sections of the Piccadilly Line from Cockfosters to Uxbridge and Hounslow; the Bakerloo Line out to Stanmore; and the western extension of the Central Line, will have been fitted with de-icing machines by the coming winter. Remaining parts of the system will be equipped during 1948.

## British and Irish Railway Stocks and Shares

Stocks	Highest 1946	Lowest 1946	Prices	
			Sept. 16, 1947	Rise Fall
G.W.R.				
Cons. Ord. ...	61½	54½	52	—
5% Con. Pref. ...	126½	107	112½	— 1
5% Red. Pref. (1950) ...	106½	102½	98½	—
5% Rt. Charge ...	140½	122½	126½	— 1
5% Cons. Guar. ...	137½	118½	124½	—
4% Deb. ...	129½	106	117½	—
4½% Deb. ...	129½	107	118½	—
4½% Deb. ...	130½	114	119½	—
5% Deb. ...	142½	125	130½	—
2½% Deb. ...	95½	81½	88½	—
L.M.S.R.				
Ord. ...	30½	26½	26½	— ½
4% Pref. (1923) ...	64	52½	55½	— ½
4% Pref. ...	86	75½	79½	— ½
5% Red. Pref. (1955) ...	105½	97	96½	—
4% Guar. ...	108½	100	96½	— ½
4% Deb. ...	120	103	107½	— ½
5% Red. Deb. (1952) ...	108½	105½	101½	—
L.N.E.R.				
5% Pref. Ord. ...	7	5	6½	—
Def. Ord. ...	3½	2½	3½	—
4% First Pref. ...	59½	50½	51½	— ½
4% Second Pref. ...	29½	25½	26	—
5% Red. Pref. (1955) ...	104	97	93½	—
4% First Guar. ...	107	98	95½	— ½
4% Second Guar. ...	101	90	89½	— 1
3% Deb. ...	104	87½	94½	— 1
4% Deb. ...	119½	102½	107	—
4½% Sinking Fund	—	—	—	—
Red. Deb. ...	107½	101½	99½	—
SOUTHERN				
Pref. Ord. ...	79½	70	69½	—
Def. Ord. ...	24	19½	21½	—
5% Pref. ...	125½	107	111½	— 1
5% Red. Pref. (1964) ...	115½	106½	105½	—
5% Guar. Pref. ...	137½	119	124½	—
5% Red. Guar. Pref. (1957) ...	115½	107½	104½	—
4% Deb. ...	129½	105½	117½	—
5% Deb. ...	139½	125½	128½	—
4% Red. Deb. (1962-67) ...	113½	104½	103½	—
4% Red. Deb. (1970-80) ...	115½	104½	105½	—
FORTH BRIDGE				
4% Deb. ...	109	103	99½	—
4% Guar. ...	105	102	95½	—
L.P.T.B.				
4½% "A" ...	133½	120½	121½	—
5% "A" ...	142½	130½	129½	— 1
3% Guar. (1967-72) ...	108	98½	95½	— 1½
5% "B" ...	128½	117½	117½	—
5% "C" ...	64½	56½	59½	—
MERSEY				
Ord. ...	34	30	32½	—
3% Perp. Pref. ...	76	69	68½	—
4% Perp. Deb. ...	117½	103	107	—
3% Perp. Deb. ...	98	81	89½	—
IRELAND*				
BELFAST & C.D.				
Ord. ...	8½	6	7½	—
G. NORTHERN				
Ord. ...	41½	30½	27	+ 1½
Pref. ...	63½	52	42½	+ 2½
Guar. ...	97½	78½	72	—
Deb. ...	107	97½	96½	—
IRISH TRANSPORT				
Common ...	19½	16½	13½	— 6
3% Deb. ...	107	100	96	—

\* Latest available quotation

## OFFICIAL NOTICES

## Crown Agents for the Colonies

**APPLICATIONS** from qualified candidates are invited for the following post:—  
**ASSISTANT LOCOMOTIVE SUPERINTENDENT** required by North Borneo Government Railway Department for 3 1/4 years with prospect of permanency. Salary according to age and war service in scale \$450 rising to \$600 a month (\$ = 2s. 4d.) Children's allowance \$50 a month for first child, \$35 for second. Outfit allowance \$60. Free passages. Small charge for quarters. Candidates, under 35, must have served apprenticeship in a Railway Locomotive Department and had outdoor experience in maintenance of pumps, excavators, windmills, etc. Experience in running a department and in the drawing office essential. Experience with oil-burning locomotives an advantage. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/18077 on both letter and envelope.

**DRAUGHTSMAN** required in London for PLANT LAYOUT work with experience of foundry equipment and conveyors. Salary according to qualifications.—Apply TATA LOCOMOTIVE AND ENGINEERING CO. LTD., 18, Grosvenor Place, London, S.W.1.

**REQUIRED** by important British-owned Railway in Brazil: Two Mechanical (Locomotive) Engineers as District Assistants. Practical workshop and drawing office experience essential, and experience of foreign or colonial railway an advantage. Experience in handling labour desirable. Candidates should have passed Associate Membership Examination of the Institution of Mechanical Engineers, or equivalent. Commencing salary £600/£700 per annum, according to qualifications. Age limit 25-30 years. Single men only need apply. Write giving full particulars of past experience.—Write Box C 849, c/o STREETS, 110, Old Broad Street, E.C.2.

**Associated Electrical Interim Dividend.**—The directors of Associated Electrical Industries Limited announce the payment on October 14 of an interim dividend of 5 per cent., less tax, on the ordinary stock on account of the year 1947, to the stockholders registered on the books of the company on September 22, 1947.

**A New B.E.T.R.O. Service in U.S.A.**—Within two weeks of an announcement in the Press of the United States, of a new service offered by the B.E.T.R.O. office in Washington to assist American importers in finding British sources for the goods they require, nearly 100 important trade inquiries have been received at the B.E.T.R.O. office in London, and forwarded to those members most likely to be interested. Mr. Warren S. Lockwood, who was at one time attached to the United States Embassy in London and is now head of B.E.T.R.O. in America, is responsible for the vigorous steps now being taken to bring very substantial orders to British manufacturers, and the new drive has been given an enthusiastic welcome in official and commercial circles. We are informed that already 200 British firms have submitted through B.E.T.R.O. their export problems.

**Brazil Railway Subsidiaries Purchased.**—An announcement issued on September 11 by the joint committee of bondholders of the Brazil Railway Company announced that the Brazilian Government had decided, subject to the approval of the Brazilian Congress, to purchase for a total sum of £2,000,000 the three subsidiary companies of the Brazil Railway Company expropriated under the terms of the Decree of July 22, 1940. The subsidiaries concerned are:—

Southern Brazil Lumber & Colonization Company  
 Companhia Industrias Brasileiras de Papel  
 Empresa de Armazens Frigorificos

It is understood that a payment of £2,000,000 will be made out of accumulated Brazilian balances in London, which have been calculated recently to amount to between £60 million and £65 million. The Brazil Railway Company is an American undertaking which was registered

**THE CO-OPERATIVE WHOLESALE SOCIETY LIMITED** invite applications for the position of Assistant to the Manager of their Department at Head Office, Manchester, which deals with the routing and arrangements for the transport of Grocery commodities and dry goods from their Central Distributing Centres and Productive Works in various parts of the country.

Applicants must have a wide and practical knowledge and experience of dealing with transport of goods by road, rail, etc. In particular the method of compiling rates and the conditions of carriage for the forwarding of goods by road and rail. No mechanical or operational knowledge or experience is required. Applications stating age, qualifications, experience and references (if any) should be addressed to the SECRETARY, C.W.S. LIMITED, 1, Ballion Street, Manchester, to arrive not later than Monday, September 29, 1947.

**EXPERIENCED** Production Engineer required for Tatanagar Workshops, Behar, India. Salary according to qualifications. Further particulars from TATA LIMITED, 18, Grosvenor Place, London, S.W.1.

**RAILWAY ENGINEER** required for large South African Commercial Engineering Company handling numerous well-known railway specialties, including locomotives. Must have sound technical experience to give service advice plus commercial and sales ability. Age 35-40. Starting salary about £65-£75 per month, depending on experience.—Box 181, *The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

**CONVERSION OF LOCOMOTIVES FROM COAL TO OIL BURNING.** Ministry of Transport plan for converting 217 locomotives. Equipment of oil burning locomotives on the G.W.R. fully described and illustrated, which forms the basis of the scheme. Reprinted from *The Railway Gazette*, January 18, August 16 and 30, 1946. Price 2s. By post 2s. 2d.

in Maine on November 12, 1906. It was formed to organise a system of railways in Southern Brazil, but as result of repurchase of lines and the sale of assets it became essentially a holding company. By the Decree of July 22, 1940, the Brazilian Government seized the assets in Brazil of this company and of others in which it was interested. Compensation payments for certain undertakings in which the company had a secondary interest were made in 1944 and 1945.

**Port Manager for Malayan Government Railway.**—The Malayan Government Railway is seeking a Port Manager, aged 30-40, who has been trained on a large railway and has held a responsible post at a railway port. See Official Notices above.

**Recent L.M.S.R. Contracts.**—A contract has been placed with the firm of Caffin & Co. Ltd., 25, Craven Street, London, W.C.2, for the construction of tank foundations, paving, drainage, and a boiler house at Swansea motive-power depot, in connection with fuelling facilities for oil-burning locomotives. Other contracts placed by the L.M.S.R. recently include one with the Concrete Proofing Co. Ltd., Glasgow, for repairs to a reinforced concrete quay at Fleetwood fish dock, and one with Wellerman Bros. Limited, Sheffield, for side and bottom excavations and the removal of silt at Altofts reservoir, Yorks.

**London Transport Staff Visit Switzerland.**—Twelve London Transport employees from the railway and road services left London on September 15 on a 14-day visit to Switzerland, in course of which they will study the methods of the most important railways and railway works throughout the country. All members of the party will write papers on what they have seen and its application to transport in London when they return. Their reports will be closely studied so that the best of the ideas gained abroad can be incorporated in London Transport. Among the organisations where the

## Crown Agents for the Colonies

**APPLICATIONS** from qualified candidates are invited for the following post:—  
**PORT MANAGER** required by Malayan Government Railway for 3 years with prospect of permanency. Salary Malayan dollars \$50 a month, plus cost-of-living allowance \$160 a month for married men and \$110 for single men. Children's allowances \$79 a month for first, \$50 for second. (\$ = 2s. 4d.) Free passages. Candidates, 30 to 40, must have been trained on a large railway and have held a responsible post at a railway port, preferably where loading and unloading is done partly by lighterage. Must have sound knowledge of modern port working, both operating and commercial. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/18348 on both letter and envelope.

**R. E. D. G. Hall & Co. Ltd.** (in Compulsory Liquidation), Railway Wagon Repairers. Under instructions from R. W. Meacock, Esq., F.C.A., Newport, Receiver and Manager for the Debenture Holders.

**FOR SALE BY TENDER**  
 123 RAILWAY WAGONS.  
 at present requisitioned by the Ministry of Transport and producing a total rental of £80 17s. 4d. a month. The Wagons will be offered in 3 Lots as follows:  
 Lot 1.—29 Wagons (10 Ton) producing rentals of £18 17s. a month.  
 Lot 2.—83 Wagons (10 Ton), producing rentals of £53 19s. a month.  
 Lot 3.—11 Wagons (12/13 Ton), producing rentals of £8 1s. 4d. a month.

Forms of Tender may be obtained upon application to either of the Auctioneers, and must be in their hands by 12 noon on Friday, October 10, 1947. For full particulars apply to MESSRS. THOMAS PARRY & SON, F.A.I., 22, Stow Hill, Newport, Mon., or to MESSRS. STEPHENSON & ALEXANDER, F.A.I.

London Transport men will work and study are the following: Swiss Federal Railways Headquarters at Berne; the Hasli hydro-electric plant near Meiringen; Zurich electric railway repair shops; Zurich locomotive works; Winterthur diesel locomotive works; Swiss railway signalling installations and factories; the Brown-Boveri locomotive works; Baden; and the Simplon Tunnel.

**L.N.E.R. Winter Train Services.**—Although the L.N.E.R. winter train services, which come into operation on October 6, represent a 10 per cent. reduction on those in force last winter, they show an advance on the present services in some cases. Principal features include the return of the "Yorkshire Pullman," the naming of an existing Sheffield express "The Master Cutler," the restoration of the "East Anglian" as a limited train, the reintroduction of seat reservation on 25 trains as compared with only 13 last winter, and the provision of restaurant cars on four more services.

**Carlisle Citadel Station Centenary.**—On September 1, 1847, the famous joint station in Carlisle known as Citadel was opened for traffic, nine days in advance of the opening of the Caledonian Railway thence to Beattock. Carlisle has always provided a focal point of great importance for Anglo-Scottish traffic, and, in the years before grouping, the station accommodated no fewer than seven different railways, and was administered by the Carlisle Citadel Station Committee, which had statutory powers almost equal to those of a railway company. To mark its centenary, some three hundred retired railwaymen and their wives and friends were entertained to a tea and concert in the Co-operative Hall, Carlisle, on September 1. The programme was organised by the Centenary Executive Committee, of which Mr. Ronald Clarke, District Goods & Passenger Manager, L.M.S.R., is Chairman. An interesting centenary brochure was provided for the occasion, containing in its twelve pages a comprehensive outline of the history of the station.

## Railway Stock Market

After last week's improvement, business in stock markets has contracted, with the result that prices in most sections again became very sensitive to moderate buying or selling. Doubts whether political factors in America will enable aid to Europe to be accelerated have made for caution, and the decline in British Funds was also an unsettling influence. Moreover, the seriousness of the economic crisis was emphasised by the official news that £20 million of the U.K. gold reserve has been sold to America.

Cheerful features, however, were not lacking, although they were mainly confined to shares of companies which it is estimated stand to benefit substantially if the export targets set out in the Cripps Plan can be realised. Textiles led the rise in export target shares, rubber manufacturers were also good under the lead of Dunlop Rubber, Avon India Rubber, etc., and many shares of companies manufacturing machinery and agricultural equipment attracted more attention. Shares of locomotive engineering and kindred companies were also more active, particularly Vulcan Foundry, which changed hands up to 29s. 6d. Iron and steels generally remained firm, sentiment continuing to benefit from the latest output figures. Tube Investments were good at virtually £7.

Best levels were not held, partly because of fears of an autumn Budget and vague market suggestions that some form of dividend limitation may be in prospect, although this might only apply to companies which have the benefit of priorities as regards labour and materials and which achieve a big expansion in profits as a result of growth in export trade.

Home rails have eased, sentiment apparently being influenced by the decline in British Funds. Buyers are still holding off despite the obvious attractions of home rails, which are still quoted at levels showing discounts of down to £13 on take-over prices. Suggestions that nationalisation of iron and steel may have to be abandoned indefinitely and that the taking over of the gas industry will be deferred, appear to have led to a revival of talk that the nationalisation take-over of the railways may be postponed. Nevertheless, as has been pointed out in these notes, this is considered extremely unlikely in responsible quarters. There is still, of course, considerable uncertainty as to whether British Transport stock will carry 2½ per cent. or 3 per cent. interest, but too much importance should not attach to this, because it is clearly stipulated under the nationalisation take-over that the issue terms in respect of British Transport stock will have to be in unison with conditions ruling in gilt-edged at time of issue.

There are continued hopes that the Argentine rail deal will be duly ratified and that the debentures will be repaid either towards the end of October or early in November. The assumption prevails that the bulk of this money will go into British Funds, and that there are possibilities of the latter staging a sharp rally during the next few months, in which case home rails would doubtless respond. Between now and the exchange into British Transport stock, home rails will be expected to approximate to the take-over prices; and there is no other group of securities offering similar scope for capital appreciation over the next few months.

Great Western ordinary at 52 is now 7 points below the take-over price, and the 4 per cent. debentures at 117½ nearly 11 below take-over. L.M.S.R. ordinary, now 26½, has a take-over of 29½, and L.N.E.R. 4 per cent. debentures are 107½ with the take-over 118½.

Latest news from Buenos Ayres indicating that a last-minute hitch in the Argentine railway deal is unlikely, has been reflected by a firmer tendency in Argentine rails, particularly in regard to the 4 per cent. debentures which have risen in unison to 91, but are still 9 points below their share-out prices. Reports of an Argentine offer to purchase the Anglo-Argentine Tramways' shareholding in Buenos Ayres Transport Corporation was regarded as an additional indication that the Argentine will ratify the railway deal.

Central Uruguay stocks were better where changed, and elsewhere Mexican Railway 6 per cent. debentures moved up to 76. On the other hand, Antofagasta eased to 10 with the 5 per cent. preference 52 and Nitrate Rails were 67s. 6d. There was rather more business reported in Brazil Rails, with Brazilian Railway first debentures moving up to 40 following the latest developments. Moreover, in response to break-up value, estimates indicating that the current market price is probably a considerable undervaluation. San Paulo ordinary stock strengthened to 145. Elsewhere, Leopoldina was 12½ and the preference stock 32½. Canadian Pacific rose to close on 17 following the unchanged interim dividend, but later eased to 16½, the statement indicating that this payment has been made possible by non-railway income.

### Traffic Table and Stock Prices of Overseas and Foreign Railways

Railways	Miles open	Week ended	Traffic for week		No. of Week	Aggregate traffic to date			Shares or Stock	Prices		
			Total this year	Inc. or dec. compared with 1945/46		Totals		Increase or decrease		Highest 1946	Lowest 1946	Sept. 16, 1947
						1946/7	1945/6					
			£	£		£	£	£				
Antofagasta ...	834	7.9.47	50,790	+ 16,600	36	1,485,640	1,158,260	+ 327,380	Ord. Stk.	11	10½	10
Arg. N.E. ...	753	6.9.47	ps.379,400	+ ps.64,300	10	ps.3,174,000	ps.3,124,900	+ ps.49,100		17	5	10
Bolivar ...	174	Aug. 1947	\$99,656	— \$1,217	35	\$872,836	\$860,897	+ \$11,939	6 p.c. Deb.	6½	5	19½
Brazil ...	—	—	—	—	—	—	—	—	Bonds	30	26	39½
B.A. Pacific ...	2,771	6.9.47	ps.2,600,000	+ ps.575,000	10	ps.24,400,000	ps.21,038,000	+ ps.3,362,000	Ord. Stk.	8½	5½	9½
B.A.G.S. ...	5,080	6.9.47	ps.3,347,000	+ ps.16,000	10	ps.33,197,000	ps.32,248,000	+ ps.949,000	Ord. Stk.	16	10½	16
B.A. Western ...	1,924	6.9.47	ps.1,402,000	+ ps.138,000	10	ps.13,411,000	ps.11,932,000	+ ps.1,479,000		19	9½	20½
Cent. Argentine	3,700	6.9.47	ps.3,303,980	+ ps.144,124	10	ps.32,058,950	ps.31,099,251	+ ps.959,699		10½	7½	16½
Do. ...	970	6.9.47	30,913	+ 3,623	10	320,762	344,154	— 23,392	Dfd.	6	4½	11½
Costa Rica ...	262	June, 1947	34,128	+ 8,679	52	356,876	344,680	+ 12,196	Ord. Stk.	8½	3½	17
Dorados ...	70	Aug. 1947	31,100	— 4,300	35	243,900	256,775	— 12,875	1 Mt. Deb.	102½	99½	108
Entre Rios ...	808	6.9.47	ps.513,900	+ ps.97,500	10	ps.4,332,700	ps.4,236,100	+ ps.96,600	Ord. Stk.	9	5½	9½
G.W. of Brazil	1,030	6.9.47	29,200	+ 5,900	36	1,122,400	977,900	+ 144,500	Ord. Stk.	26½	20½	—
Inter. Ctl. Amer.	794	July, 1947	\$1,059,747	+ \$245,025	30	\$7,963,011	\$6,472,238	+ \$1,490,773	—	—	—	—
La Guaira ...	22½	Aug., 1947	\$97,074	— \$25,111	35	\$882,233	\$944,426	— \$62,193	5 p.c. Deb.	70	58	8½
Leopoldina ...	1,918	6.9.47	72,411	— 2,306	36	2,366,095	2,096,200	+ 269,895	Ord. Stk.	5	3½	13
Mexican ...	483	31.5.47	ps.1,464,000	+ ps.459,100	22	ps.7,706,200	ps.13,441,600	+ ps.5,735,400	Ord. Stk.	1½	½	1
Midland Uruguay	319	July, 1947	15,947	+ 3,037	4	15,947	18,984	— 3,037	—	—	—	—
Nitrate ...	112	31.8.47	10,064	+ 644	35	155,200	144,782	+ 10,418	Ord. Sh.	83/9	71/3	62/6
N.W. of Uruguay	113	July, 1947	3,987	— 716	4	3,987	4,703	— 716	—	—	—	—
Paraguay Cent.	274	25.7.47	\$675,097	+ \$15,672	4	\$202,849	\$228,044	— \$25,195	Pr.Li.Stk.	78½	60	44½
Peru Corp. ...	1,059	Aug., 1947	169,493	+ 289	9	332,183	320,684	+ 11,499	Pref.	16½	8½	8½
Salvador ...	100	June, 1947	c91,000	+ c11,000	52	c1,699,000	c1,597,450	+ c101,550	Ord. Stk.	119½	52½	144½
San Paulo ...	153½	—	—	—	—	—	—	—	—	—	—	—
Talca ...	156	Aug. 1947	5,420	+ 2,165	9	11,005	7,050	+ 3,955	Ord. Sh.	22½	15½	17½
United of Havana	1,301	6.9.47	57,974	+ 12,420	10	597,603	541,437	+ 56,166	Ord. Stk.	2	—	—
Uruguay Northern	73	July, 1947	1,072	— 58	4	1,072	1,130	— 58	—	—	—	—
Canada												
Canadian National	23,535	July, 1947	9,507,250	+ 896,000	30	62,567,500	55,150,500	+ 7,417,000	—	—	—	—
Canadian Pacific	17,037	7.9.47	1,471,250	+ 95,250	36	52,760,000	48,558,000	+ 4,202,000	Ord. Stk.	25½	16½	16½
Various												
Barsi Light†	202	Aug. 1947	24,247	+ 4,642	22	138,577	129,315	+ 9,262	Ord. Stk.	123½	111	110½
Beira ...	204	June, 1947	99,433	+ 20,525	37	828,897	676,166	+ 152,731	—	—	—	—
Egyptian Delta	607	20.8.47	16,791	— 887	15	179,814	181,642	— 1,728	Prf. Sh.	75	5	6
Manila ...	—	—	—	—	—	—	—	—	B. Deb.	85	70	75
Mid. of W. Australia	277	July, 1947	17,688	+ 3,193	4	17,688	14,495	+ 3,193	Inc. Deb.	75	60	71½
Nigeria ...	1,900	June, 1947	311,524	+ 47,389	13	3,700,591	3,950,664	— 250,073	—	—	—	—
Rhodesia ...	2,445	June, 1947	569,518	+ 35,926	37	4,978,485	4,600,382	+ 378,103	—	—	—	—
South African	13,323	8.8.47	1,249,412	+ 179,942	19	23,202,261	20,557,034	+ 2,645,227	—	—	—	—
Victoria ...	4,774	May, 1947	989,352	— 361,928	48	—	—	—	—	—	—	—

† Receipts are calculated @ 1s. 6d. to the rupee